SEQUENCE LISTING

```
<110> Li, En
Okano, Masaki
Xie, Shaoping
```

- <120> De Novo DNA Cytosine Methyltransferase Genes, Polypeptides & Uses Thereof
- <130> 0609.4560002
- <140> US 09/720,086
- <141> 2000-12-20
- <150> PCT/US99/14373
- <151> 1999-06-25
- <150> 60/090,906
- <151> 1998-06-25
- <150> 60/093,993
- <151> 1998-07-24
- <160> 82
- <170> PatentIn Ver. 2.0
- <210> 1
- <211> 4192
- <212> DNA
- <213> Mus musculus
- <220>
- <221> Unsure
- <222> (4161)..(4161)
- <223> May be any nucleic acid
- <400> 1
- gaatteegge etgetgeegg geegeeggae eegeeggee acaeggeag geegeetgaa 60 geecageget gaggetgeae titteegagg gettgacate agggtetatg tittaagteti 120 agetettget tacaaagace aeggeaatte ettetetgaa geectegeag eeceagagg 180 eectegeage eecageetge egeetaetge eeageaatge eeteeagegg eeceggggae 240

accagcagct cctctctgga gcgggaggat gatcgaaagg aaggagagga acaggaggag 300 aaccgtggca aggaagagcg ccaggagccc agcgccacgg cccggaaggt ggggaggcct 360 ggccggaagc gcaagcaccc accggtggaa agcagtgaca cccccaagga cccagcagtg 420 accaccaagt ctcagcccat ggcccaggac tctggcccct cagatctgct acccaatgga 480 gacttggaga agcggagtga accccaacct gaggagggga gcccagctgc agggcagaag 540 ggtggggccc cagctgaagg agagggaact gagaccccac cagaagcctc cagagctgtg 600 qaqaatggct gctgtgtgac caaggaaggc cgtggagcct ctgcaggaga gggcaaagaa 660 cagaagcaga ccaacatcga atccatgaaa atggagggct cccgggggccg actgcgaggt 720 ggcttgggct gggagtccag cctccgtcag cgacccatgc caagactcac cttccaggca 780 ggggacccct actacatcag caaacggaaa cgggatgagt ggctggcacg ttggaaaagg 840 gaggctgaga agaaagccaa ggtaattgca gtaatgaatg ctgtggaaga gaaccaggcc 900 tctggagagt ctcagaaggt ggaggaggcc agccctcctg ctgtgcagca gcccacggac 960 cctgcttctc cgactgtggc caccaccct gagccagtag gaggggatgc tggggacaag 1020 aatgctacca aagcagccga cgatgagcct gagtatgagg atggccgggg ctttggcatt 1080 ggagagctgg tgtgggggaa acttcggggc ttctcctggt ggccaggccg aattgtgtct 1140 tggtggatga caggccggag ccgagcagct gaaggcactc gctgggtcat gtggttcgga 1200 gatggcaagt tctcagtggt gtgtgtggag aagctcatgc cgctgagctc cttctgcagt 1260 gcattccacc aggccaccta caacaagcag cccatgtacc gcaaagccat ctacgaagtc 1320 ctccaggtgg ccagcagccg tgccgggaag ctgtttccag cttgccatga cagtgatgaa 1380 agtgacagtg gcaaggctgt ggaagtgcag aacaagcaga tgattgaatg ggccctcggt 1440 qqcttccaqc cctcgggtcc taagggcctg gagccaccag aagaagagaa gaatccttac 1500 aaggaagttt acaccgacat gtgggtggag cctgaagcag ctgcttacgc cccaccccca 1560 ccagccaaga aacccagaaa gagcacaaca gagaaaccta aggtcaagga gatcattgat 1620 gagcgcacaa gggagcggct ggtgtatgag gtgcgccaga agtgcagaaa catcgaggac 1680 atttgtatct catgtgggag cctcaatgtc accctggagc acccactctt cattggaggc 1740 atgtgccaga actgtaagaa ctgcttcttg gagtgtgctt accagtatga cgacgatggg 1800 taccagtcct attgcaccat ctgctgtggg gggcgtgaag tgctcatgtg tgggaacaac 1860 aactgctgca ggtgcttttg tgtcgagtgt gtggatctct tggtggggcc aggagctgct 1920 caggcagcca ttaaggaaga cccctggaac tgctacatgt gcgggcataa gggcacctat 1980 gggctgctgc gaagacggga agactggcct tctcgactcc agatgttctt tgccaataac 2040 catgaccagg aatttgaccc cccaaaggtt tacccacctg tgccagctga gaagaggaag 2100 cccatccgcg tgctgtctct ctttgatggg attgctacag ggctcctggt gctgaaggac 2160 ctgggcatcc aagtggaccg ctacattgcc tccgaggtgt gtgaggactc catcacggtg 2220 ggcatggtgc ggcaccaggg aaagatcatg tacgtcgggg acgtccgcag cgtcacacag 2280 aagcatatcc aggagtgggg cccattcgac ctggtgattg gaggcagtcc ctgcaatgac 2340 ctctccattg tcaaccctgc ccgcaaggga ctttatgagg gtactggccg cctcttcttt 2400 gagttctacc gcctcctgca tgatgcgcgg cccaaggagg gagatgatcg ccccttcttc 2460 tggctctttg agaatgtggt ggccatgggc gttagtgaca agagggacat ctcgcgattt 2520 cttgagtcta accccgtgat gattgacgcc aaagaagtgt ctgctgcaca cagggcccgt 2580

```
tacttctggg gtaaccttcc tggcatgaac aggcctttgg catccactgt gaatgataag 2640
ctggagctgc aagagtgtct ggagcacggc agaatagcca agttcagcaa agtgaggacc 2700
attaccacca ggtcaaactc tataaagcag ggcaaagacc agcatttccc cgtcttcatg 2760
aacgagaagg aggacatcct gtggtgcact gaaatggaaa gggtgtttgg cttccccgtc 2820
cactacacag acgtctccaa catgagccgc ttggcgaggc agagactgct gggccgatcg 2880
tggagcgtgc cggtcatccg ccacctcttc gctccgctga aggaatattt tgcttgtgtg 2940
taagggacat gggggcaaac tgaagtagtg atgataaaaa agttaaacaa acaaacaaac 3000
aaaaaacaaa acaaaacaat aaaacaccaa gaacgagagg acggagaaaa gttcagcacc 3060
cagaagagaa aaaggaattt aaagcaaacc acagaggagg aaaacgccgg agggcttggc 3120
cttgcaaaag ggttggacat catctcctga gttttcaatg ttaaccttca gtcctatcta 3180
aaaagcaaaa taggcccctc cccttcttcc cctccggtcc taggaggcga actttttgtt 3240
ttctactctt tttcagaggg gttttctgtt tgtttgggtt tttgtttctt gctgtgactg 3300
aaacaagaga gttattgcag caaaatcagt aacaacaaaa agtagaaatg ccttggagag 3360
gaaagggaga gagggaaaat tctataaaaa cttaaaatat tggtttttt ttttttcct 3420
tttctatata tctctttggt tgtctctagc ctgatcagat aggagcacaa acaggaagag 3480
aatagagacc ctcggaggca gagtctcctc tcccaccccc cgagcagtct caacagcacc 3540
attectggte atgeaaaaca gaacceaact ageageaggg egetgagaga acaceacace 3600
agacactttc tacagtattt caggtgccta ccacacagga aaccttgaag aaaaccagtt 3660
tctagaagcc gctgttacct cttgtttaca gtttatatat atatgataga tatgagatat 3720
atatatataa aaggtactgt taactactgt acatcccgac ttcataatgg tgctttcaaa 3780
acagcgagat gagcaaagac atcagettee geetggeeet etgtgeaaag ggttteagee 3840
caggatgggg agaggggagc agctggaggg ggttttaaca aactgaagga tgacccatat 3900
cacccccac ccctgcccca tgcctagctt cacctgccaa aaaggggctc agctgaggtg 3960
gtcggaccct ggggaagctg agtgtggaat ttatccagac tcgcgtgcaa taaccttaga 4020
atatgaatct aaaatgactg cctcagaaaa atggcttgag aaaacattgt ccctgatttt 4080
gaattcgtca gccacgttga aggccccttg tgggatcaga aatattccag agtgagggaa 4140
                                                                  4192
agtgacccgc cattaacccc ncctggagca aataaaaaaa catacaaaat gt
```

<210> 2

<211> 4195

<212> DNA

<213> Mus musculus

<400> 2

```
gaatteeggg egeegggtt aageggees agtaaaegta gegeagegat eggeeggg 60 gattegegaa eeeggeese eggeeggee geeggeeagg accegegge egateggge 120 geeggegetae ageeageet aegaeaggee egetgagget tegtgeeagge etteggaaaee 180 teaggtatat acettteeag aegegggate teeeeteese eateeatagt geetteggae 240 caaateeagg geettettte aggaaaeaat gaagggagae ageagaeate tegaatgaaga 300
```

agagggtgcc agcgggtatg aggagtgcat tatcgttaat gggaacttca gtgaccagtc 360 ctcagacacg aaggatgctc cctcaccccc agtcttggag gcaatctgca cagagccagt 420 ctgcacacca gagaccagag gccgcaggtc aagctcccgg ctgtctaaga gggaggtctc 480 cagcettetg aattacaege aggacatgae aggagatgga gacagagatg atgaagtaga 540 tgatgggaat ggctctgata ttctaatgcc aaagctcacc cgtgagacca aggacaccag 600 gacgcgctct gaaagcccgg ctgtccgaac ccgacatagc aatgggacct ccagcttgga 660 gaggcaaaga gcctccccca gaatcacccg aggtcggcag ggccgccacc atgtgcagga 720 gtaccetgtg gagtttccgg ctaccaggte teggagaegt egageategt ettcageaag 780 cacgccatgg tcatcccctg ccagcgtcga cttcatggaa gaagtgacac ctaagagcgt 840 cagtacccca tcagttgact tgagccagga tggagatcag gagggtatgg ataccacaca 900 ggtggatgca gagagcagag atggagacag cacagagtat caggatgata aagagtttgg 960 aataggtgac ctcgtgtggg gaaagatcaa gggcttctcc tggtggcctg ccatggtggt 1020 gtcctggaaa gccacctcca agcgacaggc catgcccgga atgcgctggg tacagtggtt 1080 tggtgatggc aagttttctg agatctctgc tgacaaactg gtggctctgg ggctgttcag 1140 ccagcacttt aatctggcta ccttcaataa gctggtttct tataggaagg ccatgtacca 1200 cactctggag aaagccaggg ttcgagctgg caagaccttc tccagcagtc ctggagagtc 1260 actggaggac cagctgaagc ccatgctgga gtgggcccac ggtggcttca agcctactgg 1320 gatcgagggc ctcaaaccca acaagaagca accagtggtt aataagtcga aggtgcgtcg 1380 ttcagacagt aggaacttag aacccaggag acgcgagaac aaaagtcgaa gacgcacaac 1440 caatgactct gctgcttctg agtccccccc acccaagcgc ctcaagacaa atagctatgg 1500 cgggaaggac cgaggggagg atgaggagag ccgagaacgg atggcttctg aagtcaccaa 1560 caacaagggc aatctggaag accgctgttt gtcctgtgga aagaagaacc ctgtgtcctt 1620 ccaccccctc tttgagggtg ggctctgtca gagttgccgg gatcgcttcc tagagctctt 1680 ctacatgtat gatgaggacg gctatcagtc ctactgcacc gtgtgctgtg agggccgtga 1740 actgctgctg tgcagtaaca caagctgctg cagatgcttc tgtgtggagt gtctggaggt 1800 gctggtgggc gcaggcacag ctgaggatgc caagctgcag gaaccctgga gctgctatat 1860 gtgcctccct cagcgctgcc atggggtcct ccgacgcagg aaagattgga acatgcgcct 1920 gcaagacttc ttcactactg atcctgacct ggaagaattt gagccaccca agttgtaccc 1980 agcaatteet geagecaaaa ggaggeeeat tagagteetg tetetgtttg atggaattge 2040 aacggggtac ttggtgctca aggagttggg tattaaagtg gaaaagtaca ttgcctccga 2100 agtctgtgca gagtccatcg ctgtgggaac tgttaagcat gaaggccaga tcaaatatgt 2160 caatgacgtc cggaaaatca ccaagaaaaa tattgaagag tggggcccgt tcgacttggt 2220 gattggtgga agcccatgca atgatctctc taacgtcaat cctgcccgca aaggtttata 2280 tgagggcaca ggaaggctct tcttcgagtt ttaccacttg ctgaattata cccgccccaa 2340 ggagggcgac aaccgtccat tcttctggat gttcgagaat gttgtggcca tgaaagtgaa 2400 tgacaagaaa gacatctcaa gattcctggc atgtaaccca gtgatgatcg atgccatcaa 2460 ggtgtctgct gctcacaggg cccggtactt ctggggtaac ctacccggaa tgaacaggcc 2520 cgtgatggct tcaaagaatg ataagctcga gctgcaggac tgcctggagt tcagtaggac 2580 agcaaagtta aagaaagtgc agacaataac caccaagtcg aactccatca gacagggcaa 2640

aaaccagctt	ttccctgtag	tcatgaatgg	caaggacgac	gttttgtggt	gcactgagct	2700
cgaaaggatc	ttcggcttcc	ctgctcacta	cacggacgtg	tccaacatgg	gccgcggcgc	2760
ccgtcagaag	ctgctgggca	ggtcctggag	tgtaccggtc	atcagacacc	tgtttgcccc	2820
cttgaaggac	tactttgcct	gtgaatagtt	ctacccagga	ctggggagct	ctcggtcaga	2880
gccagtgccc	agagtcaccc	ctccctgaag	gcacctcacc	tgtccccttt	ttagctcacc	2940
tgtgtggggc	ctcacatcac	tgtacctcag	ctttctcctg	ctcagtggga	gcagagcctc	3000
ctggcccttg	caggggagcc	ccggtgctcc	ctccgtgtgc	acagctcaga	cctggctgct	3060
tagagtagcc	cggcatggtg	ctcatgttct	cttaccctga	aactttaaaa	cttgaagtag	3120
gtagtaagat	ggctttcttt	taccctcctg	agtttatcac	tcagaagtga	tggctaagat	3180
accaaaaaaa	caaacaaaaa	cagaaacaaa	aaacaaaaaa	aaacctcaac	agctctctta	3240
gtactcaggt	tcatgctgca	aaatcacttg	agattttgtt	tttaagtaac	ccgtgctcca	3300
catttgctgg	aggatgctat	tgtgaatgtg	ggctcagatg	agcaaggtca	aggggccaaa	3360
aaaaattccc	cctctcccc	caggagtatt	tgaagatgat	gtttatggtt	taagtcttcc	3420
tggcaccttc	cccttgcttt	ggtacaaggg	ctgaagtcct	gttggtcttg	tagcatttcc	3480
caggatgatg	atgtcagcag	ggatgacatc	accaccttta	gggcttttcc	ctggcagggg	3540
cccatgtggc	tagtcctcac	gaagactgga	gtagaatgtt	tggagctcag	gaagggtggg	3600
tggagtggcc	ctcttccagg	tgtgagggat	acgaaggagg	aagcttaggg	aaatccattc	3660
cccactccct	cttgccaaat	gaggggccca	gtccccaaca	gctcaggtcc	ccagaacccc	3720
ctagttcctc	atgagaagct	aggaccagaa	gcacatcgtt	ccccttatct	gagcagtgtt	3780
tggggaacta	cagtgaaaac	cttctggaga	tgttaaaagc	tttttacccc	acgatagatt	3840
gtgttttaa	ggggtgcttt	ttttaggggc	atcactggag	ataagaaagc	tgcatttcag	3900
aaatgccatc	gtaatggttt	ttaaacacct	tttacctaat	tacaggtgct	attttataga	3960
agcagacaac	acttctttt	atgactctca	gacttctatt	ttcatgttac	cattttttt	4020
gtaactcgca	aggtgtgggc	ttttgtaact	tcacaggtgt	ggggagagac	tgccttgttt	4080
caacagtttg	tctccactgg	tttctaattt	ttaggtgcaa	agatgacaga	tgcccagagt	4140
ttacctttct	ggttgattaa	agttgtattt	ctctaaaaaa	aaaaaaaaa	aaaaa	4195

<210> 3

<211> 4293

<212> DNA

<213> Homo sapiens

<400> 3

gccgcggcac	cagggcgcgc	agccgggccg	gcccgacccc	accggccata	cggtggagcc	60
atcgaagccc	ccacccacag	gctgacagag	gcaccgttca	ccagagggct	caacaccggg	120
atctatgttt	aagttttaac	tctcgcctcc	aaagaccacg	ataattcctt	ccccaaagcc	180
cagcagcccc	ccagccccgc	gcagccccag	cctgcctccc	ggcgcccaga	tgcccgccat,	240
gccctccagc	ggccccgggg	acaccagcag	ctctgctgcg	gagcgggagg	aggaccgaaa	300
adacadadaa	gaggaggagg	agccgcgtgg	caaggaggag	caccaaaaac	ccaqcaccac	360

ggcacggaag	gtggggggc	ctgggaggaa	gcgcaagcac	ccccggtgg	aaagcggtga	420
cacgccaaag	gaccctgcgg	tgatctccaa	gtccccatcc	atggcccagg	actcaggcgc	480
ctcagagcta	ttacccaatg	gggacttgga	gaagcggagt	gagccccagc	cagaggaggg	540
gagccctgct	ggggggcaga	agggcggggc	cccagcagag	ggagagggtg	cagctgagac	600
cctgcctgaa	gcctcaagag	cagtggaaaa	tggctgctgc	acccccaagg	agggccgagg	660
agcccctgca	gaagcgggca	aagaacagaa	ggagaccaac	atcgaatcca	tgaaaatgga	720
gggctcccgg	ggccggctgc	ggggtggctt	gggctgggag	tccagcctcc	gtcagcggcc	780
catgccgagg	ctcaccttcc	aggcggggga	cccctactac	atcagcaagc	gcaagcggga	840
cgagtggctg	gcacgctgga	aaagggaggc	tgagaagaaa	gccaaggtca	ttgcaggaat	900
gaatgctgtg	gaagaaaacc	aggggcccgg	ggagtctcag	aaggtggagg	aggccagccc	960
tcctgctgtg	cagcagccca	ctgaccccgc	atcccccact	gtggctacca	cgcctgagcc	1020
cgtggggtcc	gatgctgggg	acaagaatgc	caccaaagca	ggcgatgacg	agccagagta	1080
cgaggacggc	cggggctttg	gcattgggga	gctggtgtgg	gggaaactgc	ggggcttctc	1140
ctggtggcca	ggccgcattg	tgtcttggtg	gatgacgggc	cggagccgag	cagctgaagg	1200
cacccgctgg	gtcatgtggt	tcggagacgg	caaattctca	gtggtgtgtg	ttgagaagct	1260
gatgccgctg	agctcgtttt	gcagtgcgtt	ccaccaggcc	acgtacaaca	agcagcccat	1320
gtaccgcaaa	gccatctacg	aggtcctgca	ggtggccagc	agccgcgcgg	ggaagctgtt	1380
cccggtgtgc	cacgacagcg	atgagagtga	cactgccaag	gccgtggagg	tgcagaacaa	1440
gcccatgatt	gaatgggccc	tggggggctt	ccagccttct	ggccctaagg	gcctggagcc	1500
accagaagaa	gagaagaatc	cctacaaaga	agtgtacacg	gacatgtggg	tggaacctga	1560
ggcagctgcc	tacgcaccac	ctccaccagc	caaaaagccc	cggaagagca	cagcggagaa	1620
gcccaaggtc	aaggagatta	ttgatgagcg	cacaagagag	cggctggtgt	acgaggtgcg	1680
gcagaagtgc	cggaacattg	aggacatctg	catctcctgt	gggagcctca	atgttaccct	1740
ggaacacccc	ctcttcgttg	gaggaatgtg	ccaaaactgc	aagaactgct	ttctggagtg	1800
tgcgtaccag	tacgacgacg	acggctacca	gtcctactgc	accatctgct	gtgggggccg	1860
tgaggtgctc	atgtgcggaa	acaacaactg	ctgcaggtgc	ttttgcgtgg	agtgtgtgga	1920
cctcttggtg	gggccggggg	ctgcccaggc	agccattaag	gaagacccct	ggaactgcta	1980
catgtgcggg	cacaagggta	cctacgggct	gctgcggcgg	cgagaggact	ggccctcccg	2040
gctccagatg	ttcttcgcta	ataaccacga	ccaggaattt	gaccctccaa	aggtttaccc	2100
acctgtccca	gctgagaaga	ggaagcccat	ccgggtgctg	tctctctttg	atggaatcgc	2160
tacagggctc	ctggtgctga	aggacttggg	cattcaggtg	gaccgctaca	ttgcctcgga	2220
ggtgtgtgag	gactccatca	cggtgggcat	ggtgcggcac	caggggaaga	tcatgtacgt	2280
cggggacgtc	cgcagcgtca	cacagaagca	tatccaggag	tggggcccat	tcgatctggt	2340
gattgggggc	agtccctgca	atgacctctc	catcgtcaac	cctgctcgca	agggcctcta	2400
cgagggcact	ggccggctct	tctttgagtt	ctaccgcctc	ctgcatgatg	cgcggcccaa	2460
ggagggagat	gatcgcccct	tcttctggct	ctttgagaat	gtggtggcca	tgggcgttag	2520
tgacaagagg	gacatctcgc	gatttctcga	gtccaaccct	gtgatgattg	atgccaaaga	2580
agtgtcagct	gcacacaggg	cccgctactt	ctggggtaac	cttcccggta	tgaacaggcc	2640
gttggcatcc	actgtgaatg	ataagctgga	gctgcaggag	tgtctggagc	atggcaggat	2700
agccaagttc	agcaaagtga	ggaccattac	tacgaggtca	aactccataa	agcagggcaa	2760

```
agaccagcat tttcctgtct tcatgaatga gaaagaggac atcttatggt gcactgaaat
                                                                  2820
ggaaagggta tttggtttcc cagtccacta tactgacgtc tccaacatga gccgcttggc
                                                                  2880
                                                                  2940
gaggcagaga ctgctgggcc ggtcatggag cgtgccagtc atccgccacc tcttcgctcc
                                                                  3000
gctgaaggag tattttgcgt gtgtgtaagg gacatggggg caaactgagg tagcgacaca
aagttaaaca aacaaacaaa aaacacaaaa cataataaaa caccaagaac atgaggatgg
                                                                  3060
                                                                  3120
agagaagtat cagcacccag aagagaaaaa ggaatttaaa acaaaaacca cagaggcgga
                                                                  3180
aataccggag ggctttgcct tgcgaaaagg gttggacatc atctcctgat ttttcaatgt
3240
                                                                  3300
ttttttcggt cagacctttt attttctact cttttcagag gggttttctg tttgtttggg
                                                                  3360
ttttgtttct tgctgtgact gaaacaagaa ggttattgca gcaaaaatca gtaacaaaaa
                                                                  3420
ataqtaacaa taccttgcag aggaaaggtg ggaggagagg aaaaaaggga aatttttaaa
                                                                  3480
qaaatctata tattgggttg titttttttt tgttttttgt tittttttt tgggtttttt
                                                                  3540
ttttttacta tatatctttt ttttgttgtc tctagcctga tcagatagga gcacaagcag
                                                                  3600
gggacggaaa gagagagaca ctcaggcggc agcattccct cccagccact gagctgtcgt
                                                                  3660
gccagcacca ttcctggtca cgcaaaacag aacccagtta gcagcaggga gacgagaaca
ccacacaaga catttttcta cagtatttca ggtgcctacc acacaggaaa ccttgaagaa
                                                                  3720
aatcagtttc tagaagccgc tgttacctct tgtttacagt ttatatatat atgatagata
                                                                  3780
                                                                  3840
tgagatatat atataaaagg tactgttaac tactgtacaa cccgacttca taatggtgct
                                                                  3900
ttcaaacage gagatgagta aaaacatcag ettecaegtt geettetgeg caaagggttt
caccaaggat ggagaaaggg agacagcttg cagatggcgc gttctcacgg tgggctcttc
                                                                  3960
cccttggttt gtaacgaagt gaaggaggag aacttgggag ccaggttctc cctgccaaaa
                                                                  4020
agggggctag atgaggtggt cgggcccgtg gacagctgag agtgggattc atccagactc
                                                                  4080
                                                                  4140
atgcaataac cctttgattg ttttctaaaa ggagactccc tcggcaagat ggcagagggt
                                                                  4200
acggagtett caggeccagt tteteaettt agecaatteg agggeteett gtggtgggat
cagaactaat ccagagtgtg ggaaagtgac agtcaaaacc ccacctggag caaataaaaa
                                                                  4260
                                                                  4293
aacatacaaa acgtaaaaaa aaaaaaaaaa aaa
```

<210> 4 <211> 4145 <212> DNA <213> Homo sapiens

<400> 4

```
ggecgegaat teggeaega ceetgeaegg eegecageeg geeteegge agecageeg 60
gaccegegge teegeegee agecgegee eagecageeg tgeggeagga aageatgaag 120
ggagacacca ggeateteaa tggagaggag gaegeegge ggagggaaga etegateete 180
gteaaegggg eetgeagega eeagteetee gaetegeee eaateetgga ggetateege 240
acceeggaga teagaggeeg aagateaage tegegaetet eeaagagga ggtgteeagt 300
etgetaaget acacacagga ettgaeagge gatggegaeg gggaagatgg ggatggetet 360
```

gacaccccag tcatgccaaa gctcttccgg gaaaccagga ctcgttcaga aagcccagct 420 gtccgaactc gaaataacaa cagtgtctcc agccgggaga ggcacaggcc ttccccacgt 480 tccacccgag gccggcaggg ccgcaaccat gtggacgagt cccccgtgga gttcccggct 540 accaggtccc tgagacggcg ggcaacagca tcggcaggaa cgccatggcc gtcccctccc 600 agetettace ttaccatega ceteacagae gacacagagg acacacatgg gacgeeccag 660 agcagcagta ccccctacgc ccgcctagcc caggacagcc agcagggggg catggagtcc 720 ccgcaggtgg aggcagacag tggagatgga gacagttcag agtatcagga tgggaaggag 780 tttggaatag gggacctcgt gtggggaaag atcaagggct tctcctggtg gcccgccatg 840 gtggtgtctt ggaaggccac ctccaagcga caggctatgt ctggcatgcg gtgggtccag 900 tggtttggcg atggcaagtt ctccgaggtc tctgcagaca aactggtggc actggggctg 960 ttcagccagc actttaattt ggccaccttc aataagctcg tctcctatcg aaaagccatg 1020 taccatgete tggagaaage tagggtgega getggeaaga eetteeceag cageeetgga 1080 gactcattgg aggaccagct gaagcccatg ttggagtggg cccacggggg cttcaagccc 1140 actgggatcg agggcctcaa acccaacaac acgcaaccag tggttaataa gtcgaaggtg 1200 cgtcgtgcag gcagtaggaa attagaatca aggaaatacg agaacaagac tcgaagacgc 1260 acagctgacg actcagccac ctctgactac tgccccgcac ccaagcgcct caagacaaat 1320 tgctataaca acggcaaaga ccgaggggat gaagatcaga gccgagaaca aatggcttca 1380 gatgttgcca acaacaagag cagcctggaa gatggctgtt tgtcttgtgg caggaaaaac 1440 cccgtgtcct tccaccctct ctttgagggg gggctctgtc agacatgccg ggatcgcttc 1500 cttgagctgt tttacatgta tgatgacgat ggctatcagt cttactgcac tgtgtgctgc 1560 gagggccgag agctgctgct ttgcagcaac acgagctgct gccggtgttt ctgtgtggag 1620 tgcctggagg tgctggtggg cacaggcaca gcggccgagg ccaagcttca ggagccctgg 1680 agetgetaca tgtgtetece geagegetgt catggegtee tgeggegeeg gaaggactgg 1740 aacgtgcgcc tgcaggcctt cttcaccagt gacacggggc ttgaatacga agcccccaag 1800 ctgtaccctg ccattcccgc agcccgaagg cggcccattc gagtcctgtc attgtttgat 1860 ggcatcgcga caggctacct agtcctcaaa gagttgggca taaaggtagg aaagtacgtc 1920 gcttctgaag tgtgtgagga gtccattgct gttggaaccg tgaagcacga ggggaatatc 1980 aaatacgtga acgacgtgag gaacatcaca aagaaaaata ttgaagaatg gggcccattt 2040 gacttggtga ttggcggaag cccatgcaac gatctctcaa atgtgaatcc agccaggaaa 2100 ggcctgtatg agggtacagg ccggctcttc ttcgaatttt accacctgct gaattactca 2160 cgccccaagg agggtgatga ccggccgttc ttctggatgt ttgagaatgt tgtagccatg 2220 aaggttggcg acaagaggga catctcacgg ttcctggagt gtaatccagt gatgattgat 2280 gccatcaaag tttctgctgc tcacagggcc cgatacttct ggggcaacct acccgggatg 2340 aacaggcccg tgatagcatc aaagaatgat aaactcgagc tgcaggactg cttggaatac 2400 aataggatag ccaagttaaa gaaagtacag acaataacca ccaagtcgaa ctcgatcaaa 2460 caggggaaaa accaactttt ccctgttgtc atgaatggca aagaagatgt tttgtggtgc 2520 actgageteg aaaggatett tggettteet gtgeactaca cagaegtgte caacatggge 2580 cgtggtgccc gccagaagct gctgggaagg tcctggagcg tgcctgtcat ccgacacctc 2640 ttcgcccctc tgaaggacta ctttgcatgt gaatagttcc agccaggccc caagcccact 2700

```
ggggtgtgtg gcagagccag gacccaggag gtgtgattcc tgaaggcatc cccaggccct 2760
getetteete agetgtgtgg gteatacegt gtaceteagt teeetettge teagtggggg 2820
cagagccacc tgactcttgc aggggtagcc tgaggtgccg cctccttgtg cacaaatcag 2880
acctqqctqc ttqqaqcaqc ctaacacggt gctcattttt tcttctccta aaactttaaa 2940
acttgaagta ggtagcaacg tggctttttt tttttccctt cctgggtcta ccactcagag 3000
aaacaatqqc taaqatacca aaaccacagt gccgacagct ctccaatact caggttaatg 3060
ctgaaaaatc atccaagaca gttattgcaa gagtttaatt tttgaaaact gggtactgct 3120
atgtgtttac agacgtgtgc agttgtaggc atgtagctac aggacatttt taagggccca 3180
ggatcgtttt ttcccagggc aagcagaaga gaaaatgttg tatatgtctt ttacccggca 3240
cattcccctt gcctaaatac aagggctgga gtctgcacgg gacctattag agtattttcc 3300
acaatgatga tgatttcagc agggatgacg tcatcatcac attcagggct atttttccc 3360
ccacaaaccc aagggcaggg gccactctta gctaaatccc tccccgtgac tgcaatagaa 3420
ccctctgggg agctcaggaa ggggtgtgct gagttctata atataagctg ccatatattt 3480
tgtagacaag tatggctcct ccatatctcc ctcttcccta ggagaggagt gtgaagcaag 3540
gagettagat aagacaeeee etcaaaeeea tteeetetee aggagaeeta eeeteeaeag 3600
gcacaggtcc ccagatgaga agtctgctac cctcatttct catctttta ctaaactcag 3660
aggcagtgac agcagtcagg gacagacata catttctcat accttcccca catctgagag 3720
atgacaggga aaactgcaaa gctcggtgct ccctttggag attttttaat cctttttat 3780
tccataaqaa qtcqttttta gggagaacgg gaattcagac aagctgcatt tcagaaatgc 3840
tgtcataatg gtttttaaca ccttttactc ttcttactgg tgctattttg tagaataagg 3900
aacaacgttg acaagttttg tggggctttt tatacacttt ttaaaatctc aaacttctat 3960
ttttatgttt aacgttttca ttaaaatttt tttgtaactg gagccacgac gtaacaaata 4020
tggggaaaaa actgtgcctt gtttcaacag tttttgctaa tttttaggct gaaagatgac 4080
ggatgcctag agtttacctt atgtttaatt aaaatcagta tttgtctaaa aaaaaaaaa 4140
                                                                  4145
aaaaa
```

```
<210> 5
```

<211> 908

<212> PRT

<213> Mus musculus

<400> 5

Met Pro Ser Ser Gly Pro Gly Asp Thr Ser Ser Ser Ser Leu Glu Arg

1 5 10 15

Glu Asp Asp Arg Lys Glu Gly Glu Glu Glu Glu Glu Asn Arg Gly Lys
20 25 30

Glu Glu Arg Gln Glu Pro Ser Ala Thr Ala Arg Lys Val Gly Arg Pro

		35					40		•			45			
Gly	Arg 50	Lys	Arg	Lys	His	Pro 55	Pro	Val	Glu	Ser	Ser 60	Asp	Thr	Pro	Lys
Asp 65	Pro	Ala	Val	Thr	Thr 70	Lys	Ser	Gln	Pro	Met 75	Ala	Gln	Asp	Ser	Gly 80
Pro	Ser	Asp	Leu	Leu 85	Pro	Asn	Gly	Asp	Leu 90	Glu	Lys	Arg	Ser	Glu 95	Pro
Gln	Pro	Glu	Glu 100	Gly	Ser	Pro	Ala	Ala 105	Gly	Gln	Lys	Gly	Gly 110	Ala	Pro
Ala	Glu	Gly 115	Glu	Gly	Thr	Glu	Thr 120	Pro	Pro	Glu	Ala	Ser 125	Arg	Ala	Val
Glu	Asn 130	Gly	Cys	Cys	Val	Thr 135	Lys	Glu	Gly	Arg	Gly 140	Ala	Ser	Ala	Gly
Glu 145	Gly	Lys	Glu	Gln	Lys 150	Gln	Thr	Asn	Ile	Glu 155	Ser	Met	Lys	Met	Glu 160
Gly	Ser	Arg	Gly	Arg 165	Leu	Arg	Gly	Gly	Leu 170	Gly	Trp	Glu	Ser	Ser 175	Leu
Arg	Ģln	Arg	Pro 180	Met	Pro	Arg	Leu	Thr 185	Phe	Gln	Ala	Gly	Asp 190	Pro	Tyr
Tyr	Ile	Ser 195	Lys	Arg	Lys	Arg	Asp 200	Glu	Trp	Leu	Ala	Arg 205	Trp	Lys	Arg
Glu	Ala 210	Glu	Lys	Lys	Ala	Lys 215	Val	Ile	Ala	Val	Met 220	Asn	Ala	Val	Glu
Glu	Asn	Gln	Ala	Ser	Gly	Glu	Ser	Gln	Lys	Val	Glu	Glu	Ala	Ser	Pro

Pro Ala Val Gln Gln Pro Thr Asp Pro Ala Ser Pro Thr Val Ala Thr

Thr Pro Glu Pro Val Gly Gly Asp Ala Gly Asp Lys Asn Ala Thr Lys Ala Ala Asp Asp Glu Pro Glu Tyr Glu Asp Gly Arg Gly Phe Gly Ile Gly Glu Leu Val Trp Gly Lys Leu Arg Gly Phe Ser Trp Trp Pro Gly Arg Ile Val Ser Trp Trp Met Thr Gly Arg Ser Arg Ala Ala Glu Gly Thr Arg Trp Val Met Trp Phe Gly Asp Gly Lys Phe Ser Val Val Cys Val Glu Lys Leu Met Pro Leu Ser Ser Phe Cys Ser Ala Phe His Gln Ala Thr Tyr Asn Lys Gln Pro Met Tyr Arg Lys Ala Ile Tyr Glu Val Leu Gln Val Ala Ser Ser Arg Ala Gly Lys Leu Phe Pro Ala Cys His Asp Ser Asp Glu Ser Asp Ser Gly Lys Ala Val Glu Val Gln Asn Lys Gln Met Ile Glu Trp Ala Leu Gly Gly Phe Gln Pro Ser Gly Pro Lys Gly Leu Glu Pro Pro Glu Glu Glu Lys Asn Pro Tyr Lys Glu Val Tyr Thr Asp Met Trp Val Glu Pro Glu Ala Ala Ala Tyr Ala Pro Pro Pro

Pro Ala Lys Lys Pro Arg Lys Ser Thr Thr Glu Lys Pro Lys Val Lys

Glu Ile Ile Asp Glu Arg Thr Arg Glu Arg Leu Val Tyr Glu Val Arg Gln Lys Cys Arg Asn Ile Glu Asp Ile Cys Ile Ser Cys Gly Ser Leu Asn Val Thr Leu Glu His Pro Leu Phe Ile Gly Gly Met Cys Gln Asn Cys Lys Asn Cys Phe Leu Glu Cys Ala Tyr Gln Tyr Asp Asp Asp Gly Tyr Gln Ser Tyr Cys Thr Ile Cys Cys Gly Gly Arg Glu Val Leu Met Cys Gly Asn Asn Cys Cys Arg Cys Phe Cys Val Glu Cys Val Asp Leu Leu Val Gly Pro Gly Ala Ala Gln Ala Ala Ile Lys Glu Asp Pro Trp Asn Cys Tyr Met Cys Gly His Lys Gly Thr Tyr Gly Leu Leu Arg Arg Arg Glu Asp Trp Pro Ser Arg Leu Gln Met Phe Phe Ala Asn Asn His Asp Gln Glu Phe Asp Pro Pro Lys Val Tyr Pro Pro Val Pro Ala Glu Lys Arg Lys Pro Ile Arg Val Leu Ser Leu Phe Asp Gly Ile Ala Thr Gly Leu Leu Val Leu Lys Asp Leu Gly Ile Gln Val Asp Arg Tyr

Ile Ala Ser Glu Val Cys Glu Asp Ser Ile Thr Val Gly Met Val Arg

			660					665					670		
His	Gln	Gly 675	Lys	Ile	Met	Tyr	Val 680	Gly	Asp	Val	Arg	Ser 685	Val	Thr	Gln
Lys	His 690	Ile	Gln	Glu	Trp	Gly 695	Pro	Phe	Asp	Leu	Val 700	Ile	Gly	Gly	Ser
Pro 705	Cys	Asn	Asp	Leu	Ser 710	Ile	Val	Asn	Pro	Ala 715	Arg	Lys	Gly	Leu	Tyr 720
Glu	Gly	Thr	Gly	Arg 725	Leu	Phe	Phe	Glu	Phe 730	Tyr	Arg	Leu	Leu	His 735	Asp
Ala	Arg	Pro	Lys 740	Glu	Gly	Asp	Asp	Arg 745	Pro	Phe	Phe	Trp	Leu 750	Phe	Glu
Asn	Val	Val 755	Ala	Met	Gly	Val	Ser 760	Asp	Lys	Arg	Asp	Ile 765	Ser	Arg	Phe
Leu	Glu 770	Ser	Asn	Pro	Val	Met 775	Ile	Asp	: Ala	Lys	Glu 780	Val	Ser	Ala	Ala
His 785	Arg	Ala	Arg	Tyr	Phe 790	Trp	Gly	Asn	Leu	Pro 795	Gly	Met	Asn	Arg	Pro 800
Leu	Ala	Ser	Thr	Val 805	Asn	Asp	Lys	Leu	Glu 810	Leu	Gln	Glu	Cys	Leu 815	Glu
His	Gly	Arg	Ile 820	Ala	Lys	Phe	Ser	Lys 825	Val	Arg	Thr	Ile	Thr 830	Thr	Arg
Ser	Asn	Ser 835	Ile	Lys	Gln	Gly	Lys 840	Asp	Gln	His	Phe	Pro 845	Val	Phe	Met
Δen	Glu	Tare	Glu	Agn	Tle	Leu	Trn	Cvs	Thr	Glu	Met	Glu	Ara	Val	Phe

855

Gly Phe Pro Val His Tyr Thr Asp Val Ser Asn Met Ser Arg Leu Ala

860

865 870 875 880

Arg Gln Arg Leu Gly Arg Ser Trp Ser Val Pro Val Ile Arg His 885 890 895

Leu Phe Ala Pro Leu Lys Glu Tyr Phe Ala Cys Val 900 905

<210> 6

<211> 859

<212> PRT

<213> Mus musculus

<400> 6

Met Lys Gly Asp Ser Arg His Leu Asn Glu Glu Glu Gly Ala Ser Gly
1 5 10 15

Tyr Glu Glu Cys Ile Ile Val Asn Gly Asn Phe Ser Asp Gln Ser Ser 20 25 30

Asp Thr Lys Asp Ala Pro Ser Pro Pro Val Leu Glu Ala Ile Cys Thr 35 40 45

Glu Pro Val Cys Thr Pro Glu Thr Arg Gly Arg Arg Ser Ser Arg
50 55 60

Leu Ser Lys Arg Glu Val Ser Ser Leu Leu Asn Tyr Thr Gln Asp Met
65 70 75 80

Thr Gly Asp Gly Asp Arg Asp Asp Glu Val Asp Asp Gly Asn Gly Ser 85 90 95

Asp Ile Leu Met Pro Lys Leu Thr Arg Glu Thr Lys Asp Thr Arg Thr
100 105 110

Arg Ser Glu Ser Pro Ala Val Arg Thr Arg His Ser Asn Gly Thr Ser 115 120 125

- Ser Leu Glu Arg Gln Arg Ala Ser Pro Arg Ile Thr Arg Gly Arg Gln 130 135 140
- Gly Arg His His Val Gln Glu Tyr Pro Val Glu Phe Pro Ala Thr Arg 145 150 155 160
- Ser Arg Arg Arg Ala Ser Ser Ser Ala Ser Thr Pro Trp Ser Ser 165 170 175
- Pro Ala Ser Val Asp Phe Met Glu Glu Val Thr Pro Lys Ser Val Ser 180 185 190
- Thr Pro Ser Val Asp Leu Ser Gln Asp Gly Asp Gln Glu Gly Met Asp 195 200 205
- Thr Thr Gln Val Asp Ala Glu Ser Arg Asp Gly Asp Ser Thr Glu Tyr 210 215 220
- Gln Asp Asp Lys Glu Phe Gly Ile Gly Asp Leu Val Trp Gly Lys Ile 225 230 235 240
- Lys Gly Phe Ser Trp Trp Pro Ala Met Val Val Ser Trp Lys Ala Thr
 245 250 255
- Ser Lys Arg Gln Ala Met Pro Gly Met Arg Trp Val Gln Trp Phe Gly
 260 265 270
- Asp Gly Lys Phe Ser Glu Ile Ser Ala Asp Lys Leu Val Ala Leu Gly
 275 280 285
- Leu Phe Ser Gln His Phe Asn Leu Ala Thr Phe Asn Lys Leu Val Ser 290 295 300
- Tyr Arg Lys Ala Met Tyr His Thr Leu Glu Lys Ala Arg Val Arg Ala 305 310 315 320
- Gly Lys Thr Phe Ser Ser Ser Pro Gly Glu Ser Leu Glu Asp Gln Leu 325 330 335

- Lys Pro Met Leu Glu Trp Ala His Gly Gly Phe Lys Pro Thr Gly Ile 340 345 350
- Glu Gly Leu Lys Pro Asn Lys Lys Gln Pro Val Val Asn Lys Ser Lys 355 360 365
- Val Arg Arg Ser Asp Ser Arg Asn Leu Glu Pro Arg Arg Glu Asn 370 375 380
- Lys Ser Arg Arg Arg Thr Thr Asn Asp Ser Ala Ala Ser Glu Ser Pro 385 390 395 400
- Pro Pro Lys Arg Leu Lys Thr Asn Ser Tyr Gly Gly Lys Asp Arg Gly
 405 410 415
- Glu Asp Glu Glu Ser Arg Glu Arg Met Ala Ser Glu Val Thr Asn Asn 420 425 430
- Lys Gly Asn Leu Glu Asp Arg Cys Leu Ser Cys Gly Lys Lys Asn Pro 435 440 445
- Val Ser Phe His Pro Leu Phe Glu Gly Gly Leu Cys Gln Ser Cys Arg 450 455 460
- Asp Arg Phe Leu Glu Leu Phe Tyr Met Tyr Asp Glu Asp Gly Tyr Gln 465 470 475 480
- Ser Tyr Cys Thr Val Cys Cys Glu Gly Arg Glu Leu Leu Cys Ser 485 490 495
- Asn Thr Ser Cys Cys Arg Cys Phe Cys Val Glu Cys Leu Glu Val Leu 500 505 510
- Val Gly Ala Gly Thr Ala Glu Asp Ala Lys Leu Gln Glu Pro Trp Ser 515 520 525
- Cys Tyr Met Cys Leu Pro Gln Arg Cys His Gly Val Leu Arg Arg Arg 530 535 . 540

- Leu Glu Glu Phe Glu Pro Pro Lys Leu Tyr Pro Ala Ile Pro Ala Ala 565 570 575
- Lys Arg Arg Pro Ile Arg Val Leu Ser Leu Phe Asp Gly Ile Ala Thr
 580 585 590
- Gly Tyr Leu Val Leu Lys Glu Leu Gly Ile Lys Val Glu Lys Tyr Ile 595 600 605
- Ala Ser Glu Val Cys Ala Glu Ser Ile Ala Val Gly Thr Val Lys His 610 620
- Glu Gly Gln Ile Lys Tyr Val Asn Asp Val Arg Lys Ile Thr Lys Lys 625 630 635 640
- Asn Ile Glu Glu Trp Gly Pro Phe Asp Leu Val Ile Gly Gly Ser Pro 645 650 655
- Cys Asn Asp Leu Ser Asn Val Asn Pro Ala Arg Lys Gly Leu Tyr Glu 660 665 670
- Gly Thr Gly Arg Leu Phe Phe Glu Phe Tyr His Leu Leu Asn Tyr Thr
 675 680 685
- Arg Pro Lys Glu Gly Asp Asn Arg Pro Phe Phe Trp Met Phe Glu Asn 690 695 700
- Val Val Ala Met Lys Val Asn Asp Lys Lys Asp Ile Ser Arg Phe Leu 705 710 715 720
- Ala Cys Asn Pro Val Met Ile Asp Ala Ile Lys Val Ser Ala Ala His 725 730 735
- Arg Ala Arg Tyr Phe Trp Gly Asn Leu Pro Gly Met Asn Arg Pro Val
 740 745 750

Met Ala Ser Lys Asn Asp Lys Leu Glu Leu Gln Asp Cys Leu Glu Phe
755 760 765

Ser Arg Thr Ala Lys Leu Lys Lys Val Gln Thr Ile Thr Thr Lys Ser 770 780

Asn Ser Ile Arg Gln Gly Lys Asn Gln Leu Phe Pro Val Val Met Asn 785 790 795 800

Gly Lys Asp Asp Val Leu Trp Cys Thr Glu Leu Glu Arg Ile Phe Gly 805 810 815

Phe Pro Ala His Tyr Thr Asp Val Ser Asn Met Gly Arg Gly Ala Arg 820 825 830

Gln Lys Leu Leu Gly Arg Ser Trp Ser Val Pro Val Ile Arg His Leu 835 840 845

Phe Ala Pro Leu Lys Asp Tyr Phe Ala Cys Glu 850 855

<210> 7 <211> 912 <212> PRT

<213> Homo sapiens

<400> 7

Met Pro Ala Met Pro Ser Ser Gly Pro Gly Asp Thr Ser Ser Ala

1 5 10 15

Ala Glu Arg Glu Glu Asp Arg Lys Asp Gly Glu Glu Glu Glu Pro 20 25 30

Arg Gly Lys Glu Glu Arg Gln Glu Pro Ser Thr Thr Ala Arg Lys Val

Gly Arg Pro Gly Arg Lys Arg Lys His Pro Pro Val Glu Ser Gly Asp
50 55 60

Thr 65	Pro	Lys	Asp	Pro	Ala 70	Val	Ile	Ser	Lys	Ser 75	Pro	Ser	Met	Ala	Gln 80
Asp	Ser	Gly	Ala	Ser 85	Glu	Leu	Leu	Pro	Asn 90	Gly	Asp	Leu	Glu	Lys 95	Arg
Ser	Glu	Pro	Ģln 100	Pro	Glu	Glu	Gly	Ser 105	Pro	Ala	Gly	Gly	Gln 110	Lys	Gly
Gly	Ala	Pro 115	Ala	Glu	Gly	Glu	Gly 120	Ala		Glu	Thr	Leu 125	Pro	Glu	Ala
Ser	Arg 130	Ala	Val	Glu	Asn	Gly 135	Cys	Ċys	Thr	Pro	Lys 140	Glu	Gly	Arg	Gly
Ala 145	Pro	Ala	Glu	Ala	Gly 150	Lys	Glu	Gln	Lys	Glu 155	Thr	Asn	Ile	Glu	Ser 160
Met	Lys	Met	Glu	Gly 165	Ser	Arg	Gly	Arg	Leu 170	Arg	Gly	Gly	Leu	Gly 175	Trp
Glu	Ser	Ser	Leu 180	Arg	Gln	Arg	Pro	Met 185	Pro	Arg	Leu	Thr	Phe 190	Gln	Ala
Gly	Asp	Pro 195	Tyr	Tyr	Ile	Ser	Lys 200	Arg	Lys	Arg	Asp	Glu 205	Trp	Leu	Ala
Arg	Trp 210	Lys	Arg	Glu	Ala	Glu 215	Lys	Lys	Ala	Lys	Val 220	Ile	Ala	Gly	Met
Asn 225	Ala	Val	Glu	Glu	Asn 230	Gln	Gly	Pro	Gly	Glu 235	Ser	Gln	Lys	Val	Glu 240
Glu	Ala	Ser	Pro	Pro 245	Ala	Val	Gln	Gln	Pro 250	Thr	Asp	Pro	Ala	Ser 255	Pro
Thr	Val	Ala	Thr	Thr	Pro	Glu	Pro	Val	Gly	Ser	Asp	Ala	Gly	Asp	Lys

- Asn Ala Thr Lys Ala Gly Asp Asp Glu Pro Glu Tyr Glu Asp Gly Arg 275 280 285
- Gly Phe Gly Ile Gly Glu Leu Val Trp Gly Lys Leu Arg Gly Phe Ser 290 295 300
- Trp Trp Pro Gly Arg Ile Val Ser Trp Trp Met Thr Gly Arg Ser Arg 305 310 315 320
- Ala Ala Glu Gly Thr Arg Trp Val Met Trp Phe Gly Asp Gly Lys Phe 325 330 335
- Ser Val Val Cys Val Glu Lys Leu Met Pro Leu Ser Ser Phe Cys Ser 340 345 350
- Ala Phe His Gln Ala Thr Tyr Asn Lys Gln Pro Met Tyr Arg Lys Ala 355 360 365
- Ile Tyr Glu Val Leu Gln Val Ala Ser Ser Arg Ala Gly Lys Leu Phe 370 375 380
- Pro Val Cys His Asp Ser Asp Glu Ser Asp Thr Ala Lys Ala Val Glu 385 390 395 400
- Val Gln Asn Lys Pro Met Ile Glu Trp Ala Leu Gly Gly Phe Gln Pro 405 410 415
- Ser Gly Pro Lys Gly Leu Glu Pro Pro Glu Glu Glu Lys Asn Pro Tyr 420 425 430
- Lys Glu Val Tyr Thr Asp Met Trp Val Glu Pro Glu Ala Ala Ala Tyr 435 440 445
- Ala Pro Pro Pro Pro Ala Lys Lys Pro Arg Lys Ser Thr Ala Glu Lys
 450 455 460
- Pro Lys Val Lys Glu Ile Ile Asp Glu Arg Thr Arg Glu Arg Leu Val 465 470 475 480

- Tyr Glu Val Arg Gln Lys Cys Arg Asn Ile Glu Asp Ile Cys Ile Ser 485 490 495
- Cys Gly Ser Leu Asn Val Thr Leu Glu His Pro Leu Phe Val Gly Gly 500 505 510
- Met Cys Gln Asn Cys Lys Asn Cys Phe Leu Glu Cys Ala Tyr Gln Tyr 515 520 525
- Asp Asp Gly Tyr Gln Ser Tyr Cys Thr Ile Cys Cys Gly Gly Arg 530 535 540
- Glu Val Leu Met Cys Gly Asn Asn Asn Cys Cys Arg Cys Phe Cys Val
 545 550 555 560
- Glu Cys Val Asp Leu Leu Val Gly Pro Gly Ala Ala Gln Ala Ala Ile 565 570 575
- Lys Glu Asp Pro Trp Asn Cys Tyr Met Cys Gly His Lys Gly Thr Tyr 580 585 590
- Gly Leu Leu Arg Arg Glu Asp Trp Pro Ser Arg Leu Gln Met Phe 595 600 605
- Phe Ala Asn Asn His Asp Gln Glu Phe Asp Pro Pro Lys Val Tyr Pro 610 620
- Pro Val Pro Ala Glu Lys Arg Lys Pro Ile Arg Val Leu Ser Leu Phe 625 630 635 640
- Asp Gly Ile Ala Thr Gly Leu Leu Val Leu Lys Asp Leu Gly Ile Gln
 645 650 655
- Val Asp Arg Tyr Ile Ala Ser Glu Val Cys Glu Asp Ser Ile Thr Val 660 665 670
- Gly Met Val Arg His Gln Gly Lys Ile Met Tyr Val Gly Asp Val Arg 675 680 685

- Ser Val Thr Gln Lys His Ile Gln Glu Trp Gly Pro Phe Asp Leu Val 690 695 700
- Ile Gly Gly Ser Pro Cys Asn Asp Leu Ser Ile Val Asn Pro Ala Arg 705 710 715 720
- Lys Gly Leu Tyr Glu Gly Thr Gly Arg Leu Phe Phe Glu Phe Tyr Arg
 725 730 735
- Leu Leu His Asp Ala Arg Pro Lys Glu Gly Asp Asp Arg Pro Phe Phe 740 745 750
- Trp Leu Phe Glu Asn Val Val Ala Met Gly Val Ser Asp Lys Arg Asp
 755 760 765
- Ile Ser Arg Phe Leu Glu Ser Asn Pro Val Met Ile Asp Ala Lys Glu
 770 780
- Val Ser Ala Ala His Arg Ala Arg Tyr Phe Trp Gly Asn Leu Pro Gly 785 790 795 800
- Met Asn Arg Pro Leu Ala Ser Thr Val Asn Asp Lys Leu Glu Leu Gln 805 810 815
- Glu Cys Leu Glu His Gly Arg Ile Ala Lys Phe Ser Lys Val Arg Thr 820 825 830
- Ile Thr Thr Arg Ser Asn Ser Ile Lys Gln Gly Lys Asp Gln His Phe 835 840 845
- Pro Val Phe Met Asn Glu Lys Glu Asp Ile Leu Trp Cys Thr Glu Met 850 855 860
- Glu Arg Val Phe Gly Phe Pro Val His Tyr Thr Asp Val Ser Asn Met 865 870 875 880
- Ser Arg Leu Ala Arg Gln Arg Leu Leu Gly Arg Ser Trp Ser Val Pro 885 890 895

Val Ile Arg His Leu Phe Ala Pro Leu Lys Glu Tyr Phe Ala Cys Val 900 905 910

<210> 8

<211> 853

<212> PRT

<213> Homo sapiens

<400> 8

Met Lys Gly Asp Thr Arg His Leu Asn Gly Glu Glu Asp Ala Gly Gly

1 5 10 15

Arg Glu Asp Ser Ile Leu Val Asn Gly Ala Cys Ser Asp Gln Ser Ser 20 25 30

Asp Ser Pro Pro Ile Leu Glu Ala Ile Arg Thr Pro Glu Ile Arg Gly
35 40 45

Arg Arg Ser Ser Ser Arg Leu Ser Lys Arg Glu Val Ser Ser Leu Leu 50 55 60

Ser Tyr Thr Gln Asp Leu Thr Gly Asp Gly Asp Gly Glu Asp Gly Asp 65 70 75 80

Gly Ser Asp Thr Pro Val Met Pro Lys Leu Phe Arg Glu Thr Arg Thr 85 90 95

Arg Ser Glu Ser Pro Ala Val Arg Thr Arg Asn Asn Asn Ser Val Ser 100 105 110

Ser Arg Glu Arg His Arg Pro Ser Pro Arg Ser Thr Arg Gly Arg Gln 115 120 125

Gly Arg Asn His Val Asp Glu Ser Pro Val Glu Phe Pro Ala Thr Arg

135

140

Ser Leu Arg Arg Arg Ala Thr Ala Ser Ala Gly Thr Pro Trp Pro Ser 145 150 155 160

Pro Pro Ser Ser Tyr Leu Thr Ile Asp Leu Thr Asp Asp Thr Glu Asp 165 170 175

Thr His Gly Thr Pro Gln Ser Ser Ser Thr Pro Tyr Ala Arg Leu Ala 180 185 ; 190

Gln Asp Ser Gln Gln Gly Gly Met Glu Ser Pro Gln Val Glu Ala Asp 195 200 205

Ser Gly Asp Gly Asp Ser Ser Glu Tyr Gln Asp Gly Lys Glu Phe Gly 210 215 220

Ile Gly Asp Leu Val Trp Gly Lys Ile Lys Gly Phe Ser Trp Trp Pro 225 230 235 240

Ala Met Val Val Ser Trp Lys Ala Thr Ser Lys Arg Gln Ala Met Ser 245 250 255

Gly Met Arg Trp Val Gln Trp Phe Gly Asp Gly Lys Phe Ser Glu Val 260 265 270

Ser Ala Asp Lys Leu Val Ala Leu Gly Leu Phe Ser Gln His Phe Asn 275 280 285

Leu Ala Thr Phe Asn Lys Leu Val Ser Tyr Arg Lys Ala Met Tyr His 290 295 300

Ala Leu Glu Lys Ala Arg Val Arg Ala Gly Lys Thr Phe Pro Ser Ser 305 310 315 320

Pro Gly Asp Ser Leu Glu Asp Gln Leu Lys Pro Met Leu Glu Trp Ala 325 330 335

His Gly Gly Phe Lys Pro Thr Gly Ile Glu Gly Leu Lys Pro Asn Asn

			340					345					350		
Thr	Gln	Pro 355	Val	Val	Asn	Lys	Ser 360	Lys	Val	Arg	Arg	Ala 365	Gly	Ser	Arg
Lys	Leu 370	Glu	Ser	Arg	Lys	Tyr 375	Glu	Asn	Lys	Thr	Arg 380	Arg	Arg	Thr	Ala
Asp 385	Asp	Ser	Ala	Thr	Ser 390	Asp	Tyr	Cys	Pro	Ala 395	Pro	Lys	Arg	Leu	Ly:
Thr	Asn	Cys	Tyr	Asn 405	Asn	Gly	Lys	Asp	Arg 410	Gly	Asp	Glu	Asp	Gln 415	Sei
Arg	Glu	Gln	Met 420	Ala	Ser	Asp	Val	Ala 425	Asn	Asn	Lys	Ser	Ser 430	Leu	Glu
Asp	Gly	Cys 435	Leu	Ser	Cys	Gly	Arg 440	Lys	Asn	Pro	Val	Ser 445	Phe	His	Pro
Leu	Phe 450	Glu	Gly	Gly	Leu	Cys 455	Gln	Thr	Cys	Arg	Asp 460	Arg	Phe	Leu	Glu
Leu 465	Phe	Tyr	Met	Tyr	Asp 470	Asp	Asp	Gly	Tyr	Gln 475	Ser	Tyr	Cys	Thr	Val
Cys	Cys	Glu	Gly	Arg 485	Glu	Leu	Leu	Leu	Cys 490	Ser	Asn	Thr	Ser	Cys 495	Суз
Arg	Cys	Phe	Cys 500	Val	Glu	Cys	Leu	Glu [.] 505	Val	Leu	Val	Gly	Thr 510	Gly	Thi
Ala	Ala	Glu 515	Ala	Lys	Leu	Gln	Glu 520	Pro	Trp	Ser	Cys	Tyr 525	Met	Cys	Let
Pro	Gln 530	Arg	Cys	His	Gly	Val 535	Leu	Arg	Arg	Arg	Lys 540	Asp	Trp	Asn	Va:

Arg Leu Gln Ala Phe Phe Thr Ser Asp Thr Gly Leu Glu Tyr Glu Ala

545					550					555					560
Pro	Lys	Leu	Tyr	Pro 565	Ala	Ile	Pro	Ala	Ala 570	Arg	Arg	Arg	Pro	Ile 575	Arg
Val	Leu	Ser	Leu 580	Phe	Asp	Gly	Ile	Ala 585	Thr	Gly	Tyr	Leu	Val 590	Leu	Lys
Glu	Leu	Gly 595	Ile	Lys	Val	Gly	Lys 600	Tyr	Val	Ala	Ser	Glu 605	Val	Cys	Glu
Glu	Ser 610	Ile	Ala	Val	Gly	Thr 615	Val	Lys	His	Glu	Gly 620	Asn	Ile	Lys	Tyr
Val 625	Asn	Asp	Val	Arg	Asn 630	Ile	Thr	Lys	Lys	Asn 635	Ile	Glu	Glu	Trp	Gly 640
Pro	Phe	Asp	Leu	Val 645	Ile	Gly	Gly	Ser	Pro 650	Cys	Asn	Asp	Leu	Ser 655	Asn
Val	Asn	Pro	Ala 660	Arg	Lys	Gly	Leu	Tyr 665	Glu	Gly	Thr	Gly	Arg 670	Leu	Phe
Phe	Glu	Phe 675	Tyr	His	Leu	Leu	Asn 680	Tyr	Ser	Arg	Pro	Lys 685	Glu	Gly	Asp
Asp	Arg 690	Pro	Phe	Phe	Trp	Met 695	Phe	Glu	Asn	Val	Val 700	Ala	Met	Lys	Val
Gly 705	Asp	Lys	Arg	Asp	Ile 710	Ser	Arg	Phe	Leu ,	Glu 715	Cys	Asn	Pro	Val	Met 720
Ile	Asp	Ala	Ile	Lys 725	Val	Ser	Ala	Ala	His 730	Arg	Ala	Arg	Tyr	Phe 735	Trp
Gly	Asn	Leu	Pro 740	Gly	Met	Asn	Arg	Pro 745	Val	Ile	Ala	Ser	Lys 750	Asn	Asp
Lys	Leu	Glu	Leu	Gln	Asp	Cys	Leu	Glu	Tyr	Asn	Arg	Ile	Ala	Lys	Leu

755 760 765

Lys Lys Val Gln Thr Ile Thr Thr Lys Ser Asn Ser Ile Lys Gln Gly
770 780

Lys Asn Gln Leu Phe Pro Val Val Met Asn Gly Lys Glu Asp Val Leu 785 790 795 800

Trp Cys Thr Glu Leu Glu Arg Ile Phe Gly Phe Pro Val His Tyr Thr 805 810 815

Asp Val Ser Asn Met Gly Arg Gly Ala Arg Gln Lys Leu Leu Gly Arg 820 825 830

Ser Trp Ser Val Pro Val Ile Arg His Leu Phe Ala Pro Leu Lys Asp 835 840 845

Tyr Phe Ala Cys Glu 850

<210> 9

<211> 393

<212> DNA

<213> Mus musculus

<400> 9

tttctacagt atttcaggtg cctaccaca aggaaacctt gaagaaaacc agtttctaga 60 agccgctgtt acctcttgtt tacagtttat atatataga tagatatgag atatatatat 120 ataaaaggta ctgttaacta ctgtacatcc cgacttcata atggtgcttt caaaacagcg 180 agatgagcaa agacatcagc ttccgcctgg ccctcgtgtg caaatggcgt ttcatgccca 240 tggatggtgt agaggggagc agctggaggg ggtttcacaa actgaaggat gacccatatc 300 acccccacc cctgcccat gcctagcttc acctgccaaa aaggggctca gctgaggtgg 360 tcggaccctg gggaagctga gtgtggaatt tat

<210> 10

<211> 424

<212> DNA

<213> Mus musculus

```
<400> 10
gaagaaaacc agtttctaga agccgctgtt acctcttgtt tacagtttat atatatatga 60
tagatatgag atatatata ataaaaggta ctgttaacta ctgtacatcc cgacttcata 120
atggtgcttt caaaacagcg agatgagcaa agacatcagc ttccgcctgg ccctctgtgc 180
aaaqggtttc agcccaggat ggtgagaggg gagcatctgg agggggtttt aacaaactga 240
aggatgaccc atatcacccc ccacccctgc cccatgccta gcttcacctg ccaaaaaggg 300
gctcagctga ggtggtcgga ccctggggaa gctgagtgtg gaatttatcc agactcgcgt 360
gcaataacct tagaatatga atctaaaatg actgcctcag aaaaatggct tgagaaaaca 420
ttgt
<210> 11
<211> 461
<212> DNA
<213> Mus musculus
<400> 11
tttaaagcaa accacagagg aggaaaacgc cggaggcttg gccttgcaaa agggttggac 60
atcatctcct gagttttcaa tgttaacctt cagtcctatc taaaaagcaa aataggcccc 120
teccettegt tecceteegg tectaggagg egaacttttt gttttetaet ettttteaga 180
ggggttttct gtttgtttgg gtttttgttt cttgctgtga ctgaaacaag agagttattg 240
cagcaaaatc agtaacaaca aaaagtagaa atgccttgga gcggaaaggg agagagggaa 300
aattotataa aaaottaaaa tattggtttt ttttttttto ottttotata tatototttg 360
gttgtctcta gcctgatcag ataggagcac aaacaggaag agaatagaga ccctcggagg 420
                                                                  461
cagagtetee teteceacce ecegageagt eteaacagea e
<210> 12
<211> 465
<212> DNA
<213> Mus musculus
<400> 12
tcagaggggt tttctgtttg tttgggtttt tgtttcttgc tgtgactgaa acaagagagt 60
tattgcagca aaatcagtaa caacaaaaag tagaaatgcc ttggagagga aagggagaga 120
gggaaaattc tataaaaact taaaatattg gtttttttt tttttccttt tctatatatc 180
totttggttg tototagoot gatcagatag gagcacaaac aggaagagaa tagagaccot 240
cggaggcaga gtctcctctc ccaccccccg agcagtctca acagcaccat tcctggtcat 300
gcaaaacaga acccaactag cagcagggcg ctgagagaac accacaccag acacttttct 360
acagtatttc aggtgcctac cacacaggaa accttgaaga aaaccagttt ctagaagccg 420
```

tttgtttctt gctgtgactg aaacaagaga gttattgcag caaaatcagt aacaacaaaa 240 agtagaaatg ccttggagag gaaagggaga gagggaaaat tctataaaaa cttaaaatat 300

tggttttttt ttttttcctt ttctatatat cgctttggtt gtctctagcc tgatcagata 360

ggagcacaaa caggaagaga atagagaccc tcg <210> 14

<211> 309 <212> DNA

<213> Mus musculus

<400> 14

gtgatgattg acgccaaaga agtgtctgct gcacacaggg cccgttactt ctaggggtaa 60 ccttcctggc atgaacaggc ctttggatcc actgtgaatg ataagctgga gctgcaagag 120 tgtctggagc acggcagaat agccaagttc agcaaagtga ggaccattac caccaggtca 180 aactctataa agcagggcaa agaccagcat ttccccgtct tcatgaacga gaaggaggac 240 atcctgtggt gcactgaaat ggaaagggtc tttggcttcc ccgtccacta cacagacgtc 300 309 tccaacatg

<210> 15

<211> 341

<212> DNA

<213> Mus musculus

<400> 15

tgttaacctt cagtectate taaaaageaa aataggeeee teeeettett eeeeteeggt 60 cctaggaggc gaactttttg ttttctactc tttttcagag gggttttctg tttgtttggg 120 tttttgtttc ttgctgtgac tgaaacaaga gagttattgc agcaaaatca gtaacaacaa 180 aaagtagaaa tgccttggag aggaaaggga gagagggaaa attctataaa aacttaaaat 240

```
attggttttt tttttttcc ttttctatat atctctttgg ttgtctctag cctgatcaga 300
taggagcaca aacaggaaga gaatagagac cctcggaggc a
<210> 16
<211> 240
<212> DNA
<213> Mus musculus
<220>
<221> Unsure
<222> (32)..(32)
<223> May be any nucleic acid
<400> 16
acattttgta tgttttttta tttgctccag gnggggttaa tggcgggtca ctttccctca 60
ctctggaata tttctgatcc cacaaggggc cttcaacgtg gctgacgaat tcaaaatcag 120
ggacaatgtt ttctcaagcc atttttctga ggcagtcatt ttagattcat attctaaggt 180
tattgcacgc gagtctggat aaattccaca ctcagcttcc ccagggtccg accacctcag 240
<210> 17
<211> 256
<212> DNA
<213> Mus musculus
<220>
<221> Unsure
<222> (75)..(75)
<223> May be any nucleic acid
<400> 17
atcagcttcc gcctggccct ctgtgcaaag ggtttcagcc caggatgggg agaggggagc 60
agctggaggg ggttntaaca aactgaagga tgacccatat caccccccac ccctgcccca 120
tgcctagctt cacctgccaa aaaggggctc agctgaggtg gtcggaccct ggggaagctg 180
agtgtggaat ttatccagac tcgcgtgcaa taaccttaga atatgaatct aaaatgactg 240
                                                                   256
cctcagaaaa atggct
<210> 18
<211> 435
<212> DNA
<213> Mus musculus
<400> 18
```

```
gtggaagccc atgcaatgat ctctctaacg tcaatcctgc ccgcaaaggt ttatatgagg 60
gcacaggaag gctcttcttc gagttttacc acttgctgaa ttatacccgc cccaaggagg 120
gcgacaaccg tccattcttc tggatgttcg agaatgttgt ggccatgaaa gtgaatgaca 180
agaaagacat ctcaagattc ctggcatgta acccagtgat gatcgatgcc atcaaggtgt 240
ctgctgctca cagggcccgg tacttctggg gtaacctacc cggaatgaac aggcccgtga 300
tggcttcaaa gaatgataag ctcgagctgc aggactgcct ggagttcagt aggacagcaa 360
agttaaagaa agtgcagaca ataaccacca agtcgaactc catcagacag ggcaaaaacc 420
                                                                   435
agcttttccc tgtag
<210> 19
<211> 522
<212> DNA
<213> Mus musculus
<400> 19
gatgatgtca gcagggatga catcaccacc tttagggctt ttccctggca ggggcccatg 60
tggctagtcc tcacgaagac tggagtagaa tgtttggagc tcaggaaggg tgggtggagt 120
ggagtetett ecaggtgtga gggatacgaa ggaggaaget tagggaaate catteeccae 180
tccctcttgc caaatgaggg gcccagtccc caacagctca ggtccccaga accccctagt 240
tcctcatgag aagctaggac cagaagcaca tcgttcccct tatctgagca gtgtttgggg 300
aactacagtg aaaaccttct ggagatgtta aaagcttttt accccacgat agattgtgtt 360
tttaaggggt gctttttta ggggcatcac tggagataag aaagctgcat ttcagaaatg 420
ccatcgtaat ggtttttaaa caccttttac ctaattacag gtgctatttt atagaagcag 480
                                                                  522
acaacacttc tttttatgac tctcagactt ctattttcat gt
<210> 20
<211> 348
<212> DNA
<213> Mus musculus
<400> 20
aaaggaggcc cattagagtc ctgtctctgt ttgatggaat tgcaacgggg tacttggtgc 60
tcaaggagtt gggtattaaa gtggaaaagt acattgcctc cgaagtctgt gcagagtcca 120
tcgctgtggg aactgttaag catgaaggcc agatcaaata tgtcaatgac gtccggaaaa 180
tcaccaagaa aaatattgaa gagtggggcc cgttcgactt ggtgattggt ggaagcccat 240
gcaatgatet etetaaegte aateetgeee gcaaaggttt atatgaggge acaggaagge 300
                                                                   348
tottottoga gttttaccac ttgctgaatt atacccgccc caaggagg
```

<211> 258

```
<212> DNA
<213> Mus musculus
<400> 21
qtttatgqtt taagtcttcc tggcaccttc cccttgcttt ggtacaaggg ctgaagtcct 60
gttggtcttg tagcatttcc caggatgatg atgtcagcag ggatgacatc atcaccttta 120
gggcttttcc ctggcagggg cccatgtggc tagtcctcac gaagactgga gtagaatgtt 180
tggagctcag gaagggtggg tggagtgtgc ctcttccagg tgtgagggat acgaaggagg 240
aagcttaggg aaatccat
<210> 22
<211> 334
<212> DNA
<213> Mus musculus
<400> 22
tggggtaacc tacccggaat gaacagttaa agaaagtgca gacaataacc accaagtcga 60
actccatcag acagggcaaa aaccagcttt tccctgtagt catgaatggc aaggacgacg 120
ttttgtggtg cactgagete gaaaggatet teggetteee tgeteactae aeggaegtgt 180
ccaacatggg ccgcggcgcc cgtcagaagc tgctgggcag gtcctggagt gtaccggtca 240
tcagacacct gtttgccccc ttgaaggact actttgcctg tgaatagttc tacccaggac 300
                                                                   334
tggggagctc tcggtcagag ccagtgccca gagt
<210> 23
<211> 299
<212> DNA
<213> Mus musculus
<220>
<221> Unsure
<222> (59)..(59)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (173)..(173)
<223> May be any nucleic acid
<400> 23
ctgtttttgt ttgttttttt ggtatcttag ccatcacttc tgagtgataa actcaggang 60
```

```
gtaaaagaaa gccatcttac tacctacttc aagttttaaa gtttcagggt aagagaacat 120
gagcaccatg ccgggctact ctaagcagcc aggtctgagc tgtgcacacg ganggagcac 180
cqqqqctccc ctgcaaggcc aggaggctct gctcccactg agcaggagaa agctgaggta 240
cagtgatgtg aggccccaca caggtgagct aaaaagggga caggtgaggt gccttcagg 299
<210> 24
<211> 455
<212> DNA
<213> Mus musculus
<400> 24
gatcgcttcc tagagctctt ctacatgtat gatgaggacg gctatcagtc ctactgcacc 60
gtgtctgtga gggccgtgaa ctgctgctgt gcagtaacac aagctgctgc agatgcttct 120
gtgtggagtg tctggaggtg ctggtgggcg caggacagct gaggatgcca agctgcagga 180
accetggage tgetatatgt geeteeetea gegetgeeat ggggteetee gaegeaggaa 240
agattggaac atgcgcctgc aagacttctt cactactgat cctgacctgg aagaatttca 300
ggagccaccc aagttgtacc cagcaattcc tgcagccaaa aggaggccca ttagagtcct 360
gtctctgttt gatggaattg caacggggta cttggtgctc aaggagttgg gtattaaagt 420
ggaaaagtac attgcctccg aagtctgtgc agagt
                                                                   455
<210> 25
<211> 368
<212> DNA
<213> Homo sapiens
<220>
<221> Unsure
<222> (307)..(307)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (335)..(335)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (353)..(353)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (360)..(360)
<223> May be any nucleic acid
```

<211> 318

```
<400> 25
acgttttgta tgttttttta tttgctccag gtggggtttt gactgtcact ttcccacact 60
ctggattagt tctgatccca ccacaaggag ccctcgaatt ggctaaagtg agaaactggg 120
cctqaaqact ccgtaccctc tgccatcttg ccgagggagt ctccttttag aaaacaatca 180
aagggttatt gcatgagtct ggatgaatcc cactctcagc ttgtccacgg gcccgaccac 240
ctcatctagc cccctttttg gcaagggaga acctggctcc caagttctcc tccttcactt 300
tegttaneaa accaaggggg aagaageeea eegtngagaa egegeeatet tgnaaagetn 360
                                                               368
ggtcttcc
                                    1
<210> 26
<211> 399
<212> DNA
<213> Homo sapiens
<220>
<221> Unsure
<222> (87)..(87)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (314)..(314)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (318)..(318)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (370)..(370)
<223> May be any nucleic acid
<400> 26
qaacatqaqq atggagagaa gtatcagcac ccagaagaga aaaaggaatt taaaacaaaa 60
accacagagg cggaaatacc ggaggcnttt gcttgcgaaa agggttggac atcatctcct 120
tececettee etttttte ggteagaeet tttattttet aetetttea gaggggtttt 240
ctgtttgttt gggttttgtt tcttgctgtg actgaaacaa gaaggttatt gcagcaaaaa 300
tcaggtaaca aaanatangt aacaatacct tgcagaggaa aggtgggagg agaggaaaaa 360
agggaaattn ctatagaaat ctatatattg gggttggtt
                                                               399
<210> 27
```

```
<212> DNA
<213> Homo sapiens
<220>
<221> Unsure
<222> (205)..(205)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (275)..(275)
<223> May be any nucleic acid
<400> 27
gtacgaggtg cggcagaagt gccggaacat tgaggacatc tgcatctcct gtgggagcct 60
caatgttacc ctggaacacc ccctcttcgt tggaggaatg tgccaaaact gcaagaactg 120
ctttctggag tgtgcgtacc agtacgacga cgacggctac cagtcctact gcaccatctg 180
ctgtgggggc cgtgaggtgc tcatntgcgg aaacaacaac tgctgcaggt gcttttgcgt 240
ggagtgtgtg gacctcttgg tggggccggg ggctncccag gcagcagtta aggaagatca 300
                                                                   318
tgtacgtcgg ggacgtcc
<210> 28
<211> 259
<212> DNA
<213> Homo sapiens
<220>
<221> Unsure
<222> (227)..(227)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (234)..(234)
<223> May be any nucleic acid
<400> 28
gagccgagca gctgaaggca cccgctgggt catgtggttc ggagacggca aattctcagt 60
ggtgtgtgtt gagaagctga tgccgctgag ctcgttttgc agtgcgttcc accaggccac 120
gtacaacaag cagcccatgt accgcaaagc catctacgag gtcctgcagg tggccagcag 180
ccgcgcgggg aagctgttcc cggtgtgcca cgacagcgat gagagtnaca ctgncaaggc 240
                                                                   259
cgtgggaggt gcagaacaa
```

```
<211> 483
<212> DNA
<213> Homo sapiens
<400> 29
ttttttttt ttgtatgttt ttttatttgc tccaggtggg gttttgactg tcactttccc 60
acactetqqa ttaqttetqa teccaecaca aggageeete gaattggeta aagtgagaaa 120°
ctgggcctga agactccgta ccctctgcca tcttgccgag ggagtctcct tttagaaaac 180
aatcaaaqqq ttattqcatq agtctggatg aatcccactc tcagctgtcc acggggccga 240
ccacctcatc taggecectt tttggcaagg agaacceggg teccaagtte teeteettea 300
cttcgttaca aaccaggggg aaaaagccca cgtgaaaacg cggcatctgc aaaatggttc 360
cctttcttca tccctgggga aacctttgcg ccaaggcaac gtggaaactg atggttttac 420
tcaactcgct gttttgaagc gccattatga aatcggggtt gtacgtaggt aaagtcccgt 480
gcc
<210> 30
<211> 337
<212> DNA
<213> Homo sapiens
<220>
<221> Unsure
<222> (41)..(41)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (45)..(45)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (176)..(176)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (190)..(190)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (207)..(207)
<223> May be any nucleic acid
<220>
<221> Unsure
```

<211> 430

```
<222> (265)..(265)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (290)..(290)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (317)..(317)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (322)..(322)
<223> May be any nucleic acid
<400> 30
gggcattcag gtggaccgct acattgcctc ggaggtgtgt naggnctcca tcacggtggg 60
catqqtqcqq caccagggga agatcatgta cgtcggggac gtccgcagcg tcacacagaa 120
gcatatccag gagtggggcc cattcgatct ggtgattggg ggcagtccct gcaatnacct 180
ctccatcgtn aaccctgctc gcaaggncct ctacgagggc actggccggc tcttctttaa 240
gttctaccgc ctcctgcatg atgcncggcc caaggagggg agatgatcgn cccttcttct 300
ggctctttaa gaatgtngtg gnccatgggc gtttagt
                                                                   337
<210> 31
<211> 271
<212> DNA
<213> Homo sapiens
<220>
<221> Unsure
<222> (234)..(234)
<223> May be any nucleic acid
<400> 31
cttgtttaca gtttatatat atatgataga tatgagatat atatataaaa ggtactgtta 60
actactqtac aacccqactt cataatggtg ctttcaaaca gcgagatgag taaaaaacatc 120
agcttccacg ttgccttctg cgcaaagggt ttcaccaagg atggagaaag ggagacagct 180
tgcagatggc gcgttctcac ggtgggctct tccccttggt ttgtaacgaa gtgnaggagg 240
                                                                   271
agaacttggg agccaggttc tccctgccaa a
<210> 32
```

<212> DNA

<213> Homo sapiens

```
<400> 32
. acgttttgta tgttttttta tttgctccag gtggggtttt gactgtcact ttcccacact 60
  ctggattagt tctgatccca ccacaaggag ccctcgaatt ggctaaagtg agaaactggg 120
  cctgaagact ccgtaccctc tgccatcttg ccgagggagt ctcctttaga aaacaatcaa 180
  agggttattg catgagtetg gatgaatece acteteaget gtecaeggge eegaeeacet 240
  catchagece cetttttggc agggagaace tggctcccaa gttctcctcc ttcacttcgt 300
  tacaaaccaa ggggaagagc ccaccgtgag aacgcgccat ctgcaagctg tctccctttc 360
  tccatccttg gtgaaacccc tttgcgcaga aggcaacgtg gaagctgatg tttttactca 420
                                                                    430
  tctcgctgtt
  <210> 33
  <211> 483
  <212> DNA
  <213> Homo sapiens
  <400> 33
 ttttttttt ttgtatgttt ttttatttgc tccaggtggg gttttgactg tcactttccc 60
  acactetgga ttagttetga teccaceaca aggageeete gaattggeta aagtgagaaa 120
  ctgggcctga agactccgta ccctctgcca tcttgccgag ggagtctcct tttagaaaac 180
  aatcaaaggg ttattgcatg agtctggatg aatcccactc tcagctgtcc acggggccga 240
 ccacctcatc taggecectt tttggcaagg agaacceggg teccaagtte tecteettea 300
 cttcgttaca aaccaggggg aaaaagccca cgtgaaaacg cggcatctgc aaaatggttc 360
 cctttcttca tccctgggga aacctttgcg ccaaggcaac gtggaaactg atggttttac 420
 tcaactcgct gttttgaagc gccattatga aatcggggtt gtacgtaggt aaagtcccgt 480
                                                                    483
 gcc
  <210> 34
 <211> 411
 <212> DNA
  <213> Homo sapiens
 <400> 34
 tttttttttta cgttttgtat gtttttttat ttgctccagg tggggttttg actgtcactt 60
 tcccacactc tggattagtt ctgatcccac cacaaggagc cctcgaattg gctaaagtga 120
 gaaactgggc ctgaagactc cgtaccctct gccatcttgc cgagggagtc tccttttaga 180
 aaacaatcaa agggttattg catgagtctg gatgaatccc actctcagct gtccacgggc 240
```

```
ccgaccacct catctagccc ccttttggca gggagaacct ggctcccaag ttctcctcct 300
 tcacttcgtt acaaaccaag gggaagagcc caccgtgaga acgcgccatc tgcaagctgt 360
 ctccctttct ccatccttgg tgaaaccctt tgcgcagaag gcaacgtgga a
                                                                    411
 <210> 35
 <211> 530
 <212> DNA
 <213> Homo sapiens
 <400> 35
 cgcctggacg agcccagact gctgggccgg tcatggagcg cgccagtcat ccgccacctc 60
 ttcgctccgc tgaaggcgta ttttgcgtgt gtctaaggga catgggggca aactgaggta 120
gcgacacaaa gttaaacaca caaacacccc acacacaaca taatacaaca ccaagaacat 180
gaggatggag agaagtatca gccacccaga agagaacaag gaatttaaaa ccaaaaccac 240
 agaggcggaa ataccggagg actttgcctt gcgaccaggg ttggacatca tctcctgatt 300
tttcaatgtt attcttcagt cctatttaaa aacaaaacca agctcccttc ccttcctgcg 360
gcttcccttt tttttcggtc agacctttta ttttctactc ttttcagagg ggttttctgt 420
 ttgtttgggt tttgtttctt gctgtgactg aaacaagaag gttattgcag caaaaatcag 480
 taacaaaaaa tagtaacaat accttgcaga ggaaaggtgg gagagaggaa
                                                                   530
 <210> 36
 <211> 535
 <212> DNA
 <213> Homo sapiens
. <400> 36
tttacgtttt gtatgttttt ttatttgctc caggtggggt tttgactgtc actttcccac 60
actotggatt agttotgato coaccacaag gagocotoga attggotaaa gtgagaaact 120
gggcctgaag actccgtacc ctctgccatc ttgccgaggg agtctccttt tagaaaacaa 180
tcaaaqqqtt attqcatqaq tctgqatgaa tcccactctc agctgtccac gggcccgacc 240
accteateta geceeetttt tggeagggag aacctggete ceaagttete eteetteaet 300
tegttacaaa eeaeggggaa gageeeaeeg tgagaaegeg eeatetgeaa getgteteee 360
tttctccatc cttggtgaaa ccctttgcgc agaaggcaac gtggaagctg atgtttttac 420
 tcatctcgct gtttgaaagc accattatga agtcgggttg tacagtagtt aacagtacct 480
 tttatatata tatctcatat ctatcatata tatataaact gtaaacaaga ggtaa
 <210> 37
 <211> 428
 <212> DNA
```

```
<213> Homo sapiens
<220>
<221> Unsure
<222> (12)..(12)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (15)..(15)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (415)..(415)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (424)..(424)
<223> May be any nucleic acid
<400> 37
acgttttgta tntantttta tttgctccag gtggggtttt gactgtcact ttcccacact 60
ctggattagt tctgatccca ccacaaggag ccctcgaatt ggctaaagtg agaaactggg 120
cetgaagact cegtaceete tgecatettg cegagggagt eteettttag aaaacaatca 180
aagggttatt gcatgagtct ggatgaatcc cactctcagc tgtccacggg cccgaccacc 240
tcatctagec ccctttttgg cagggagaac ctgggctccc aagttctcct ccttcacttc 300
gttacaaacc aaggggaagg agcccaccgt gagaacggcg ccatcttgca agctgtctcc 360
ctttctccat ccttgggtga aacccttttg cgcagaaggg caacgtggga agctngatgt 420
                                                                   428
tttntaac
<210> 38
<211> 419
<212> DNA
<213> Homo sapiens
<220>
<221> Unsure
<222> (306)..(306)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (325)..(325)
<223> May be any nucleic acid
<220>
<221> Unsure
```

```
<222> (341)..(341)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (367)..(367)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (385)..(385)
<223> May be any nucleic acid
<400> 38
atqqqcqtta qtqacaagag ggacatctcg cgatttctcg agtccaaccc tgtgatgatt 60
gatgccaaag aagtgtcagc tgcacacagg gcccgctact tctggggtaa ccttcccggt 120
atgaacaggc cgttggatcc actgtgaatg ataagctgga gctgcaggag tgtctggagc 180
atggcaggat agccaagttc agcaaagtga ggaccattac tacgaggtca aactccataa 240
agcagggcaa agaccagcat tttcctgtct tcatgaatga gaaagaggac atcttatggt 300
gcactnaaat tggaaagggt atttngggtt tcccagtcca ntatactgac gtctccaaca 360
tgagccnctt tgggagggca gagantgctg gggccggttc atgggagcgt gcccagttc 419
<210> 39
<211> 437
<212> DNA
<213> Homo sapiens
·<220>
<221> Unsure
<222> (2)..(2)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (11)..(11)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (23)..(23)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (76)..(76)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (224)..(224)
```

```
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (290)..(290)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (362)..(362)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (376)..(376)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (386)..(386)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (426)..(426)
<223> May be any nucleic acid
<400> 39
tnttttgttg nctctagcct gancagatag gagcacaagc aggggacgga aagagagaga 60
cactcaggcg gcacanttcc ctcccagcca ctgagctgtc gtgccagcac cattcctggt 120
cacgcaaaac agaacccagt tagcagcagg gagacgagaa caccacaca gacatttttc 180
tacagtattt caggtgccta ccacacagga aaccttgaag aaantcagtt tctaggaagc 240
cgctgttacc tcttgtttac agtttatata tatatgatag atatgagatn tatatataaa 300
aggtactgtt aactactgta caacccgact tcataatggg tgctttcaaa caggcgaggt 360
gngtaaaaac atcagnttcc acgttngcct tttgcgcaaa gggtttcacc aggttgggga 420
aagggngaca gcttttt
<210> 40
<211> 385
<212> DNA
<213> Homo sapiens
<220>
<221> Unsure
<222> (340)..(340)
<223> May be any nucleic acid
<220>
<221> Unsure
```

```
<222> (365)..(365)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (376)..(376)
<223> May be any nucleic acid
<400> 40
tacgttttgt atgtttttt atttgctcca ggtggggttt tgactgtcac tttcccacac 60
tctggattag ttctgatccc accacaagga gccctcgaat tggctaaagt gagaaactgg 120
gcctgaagac tecgtacect etgecatett geegagggag teteettta gaaaacaate 180
aaagggttat tgcatgagtc tggatgaatc ccactctcag ctgtccacgg gcccgaccac 240
ctcatctage ecectttttg geagggagaa ectgggetee eaagttetee teetteactt 300
cgttacaaac caaggggaag agcccaccgt gagaacgcgn catctgcaag ctgtctccct 360
                                                                   385
ttttncatcc ttggtngaaa ccctt
<210> 41
<211> 294
<212> DNA
<213> Homo sapiens
<220>
<221> Unsure
<222> (66)..(66)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (73)..(73)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (267)..(267)
<223> May be any nucleic acid
<400> 41
aaaggtggga gagaggaaaa aaggaaattc tatagaaatc tatatattgg gttgtttttt 60
ttttttttt ttnttttt ttttttgggt ttttttttt tactatatat ctttttttg 120
ttgtctctag cctgatcaga taggagcaca agcaggggac ggaaagagag agacactcag 180
geggeacatt tgecetecca gecaetgage tgtegtgeca geaecattee tgggteaege 240
aaaacagaac ccagttagca gcagggnaga cgagaacacc acacaagaca tttt
```

```
<210> 42
<211> 610
<212> DNA
<213> Homo sapiens
<220>
<221> Unsure
<222> (576)..(576)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (590)..(590)
<223> May be any nucleic acid
<400> 42
tacqttttqt atgtttttt atttgctcca ggtggggttt tgactgtcac tttcccacac 60
tctggattag ttctgatccc accacaagga gccctcgaat tggctaaagt gagaaactgg 120
qcctgaaqac tccgtaccct ctgccatctt gccgagggag tctcctttta gaaaacaatc 180
aaaqqqttat tqcatqaqtc tqqatqaatc ccactctcag ctgtccacgg gcccgaccac 240
ctcatctagc cccctttttg gcagggagaa cctggctccc aagttctcct ccttcacttc 300
gttacaaacc aaggggaaga gcccaccgtg agaacgcgcc atctgcaagc tgtctccctt 360
tctccatcct ttggtggaaa cccttttgcg cagaaggcaa cgtggaagct gatgtttta 420
ctcatctcgc tgtttgaaag caccattatg aagtcgggtt gtacagtagt taacagtacc 480
ttttatatat atatctcata tctatcatat atatataaac tggtaaacaa gaggtaacag 540
cgggcttcta gaaactgatt ttcttcaagg tttccngtgt ggtaggcacn tgaaatactg 600
                                                                   610
gtagaaaatg
<210> 43
<211> 283
<212> DNA
<213> Homo sapiens
<220>
<221> Unsure
<222> (72)..(72)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (272)..(272)
<223> May be any nucleic acid
<400> 43
taactttgtg tcgctacctc agtttgcccc catgtccctt acacacacgc aaaatactcc 60
```

<212> DNA

```
ttcaqcqqaq anacqaggtg gcggatgact ggcacgctcc atgaccggcc cagcagtctc 120
tgcctcgcca agcggctcat gttggagacg tcagtatagt ggactgggaa accaaatacc 180
ctttccattt cagtgcacca taagatgtcc tctttctcat tcatgaagac aggaaaaatg 240
ctggtctttg gcctgcttta tggagttttg anctcgtaag taa
                                                                   283
<210> 44
<211> 383
<212> DNA
<213> Homo sapiens
<400> 44
gcggggacgt ccgcagcgtc acacagaagc atatccagga gtggggccca ttcgatctgg 60
tgattggggg cagtccctgc aatgacctct ccatcgtcaa ccctgctcgc aagggcctct 120
acgagggcac tggccggctc ttctttgagt tctaccgcct cctgcatgat gcgcggccca 180
aggaggaga tgatcgcccc ttctctggct ctttgagaat ttggtggcca tggcgttagt 240
acacaqaqaq qacacatctc gcgatttctc gagtccaacc ctgtatatga ttgatgccaa 300
agaagtetea tetgeacaga ggeeeeteta ettetggggt caceteeeeg tattaacagg 360
                                                                   383
ccgtaggatc cactgttatt ata
<210> 45
<211> 447
<212> DNA
<213> Homo sapiens
<220>
<221> Unsure
<222> (445)..(445)
<223> May be any nucleic acid
<400> 45
acgttttgta tgttttttta tttgctccag gtggggtttt gactgtcact ttcccacact 60
ctggattagt tctgatccca ccacaaggag ccctcgaatt ggctaaagtg agaaactggg 120
cctgaagact ccgtaccctc tgccatcttg ccgagggagt ctccttttag aaaacaatca 180
aagggttatt gcatgagtct ggatgaatcc cactctcagc tgtccacggg cccgaccacc 240
tcatctaagc cccctttttg gcagggagaa cctggctccc aagttctcct ccttcacttc 300
gttacaaacc aaggggaaga gcccaccgtg agaacgcgcc atetgcaagc tgtctccctt 360
tctccatcct tggtgaaacc tttgcgcaga aggcaacgtg gaaagctgaa ggtttttact 420
catctcgctg tttgaaaagc accanta
<210> 46
<211> 100
```

```
<213> Homo sapiens
<220>
<221> Unsure
<222> (96)..(96)
<223> May be any nucleic acid
<400> 46
acaccaagaa catgagggat ggagagaagt atcagcaccc agaagagaaa aaggaattta 60
                                                                    100
aaacaaaaac cacagaggcg gaaataccgg tgactnttct
<210> 47
<211> 150
<212> DNA
<213> Homo sapiens
<400> 47
tactecttca gegggtagga ggtggeggat gaetggeacg etceatgace ggeecageag 60
tctctgcctc gccaagcgct catgttggag aggtcagtat agtggactgg gaaaccaaat 120
                                                                   150
accettteca ttteagtgea ceataagatg
<210> 48
<211> 237
<212> DNA
<213> Homo sapiens
<220>
<221> Unsure
<222> (7)..(7)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (42)..(42)
<223> May be any nucleic acid
<220'>
<221> Unsure
<222> (45)..(45)
<223> May be any nucleic acid
<400> 48
gctgtcncag gggtgtgtgg gtctaggagc ctggctggag gncancgctg ggtgggagct 60
tgggacaccg atgggcctgc atctgacctg ttgtgctcac tgcttaggac cctccaaagg 120
tttacccacc tgtcccagct gagaagagga agcccatccg ggtgctgtct ctctttgatg 180
```

237

gaatcgctac aggtgagggg tgcaggccca agaggtgctg gcctcgtgcg aattcct

```
<210> 49
<211> 442
<212> DNA
<213> Homo sapiens
<220>
<221> Unsure
<222> (19)..(19)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (91)..(91)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (137)..(137)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (388)..(388)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (397)..(397)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (428)..(428)
<223> May be any nucleic acid
<400> 49
ttttttacta tatatcttnt ttttgttgtc tctagcctga tcagatagga gcacaagcag 60
gggacggaaa gagagagaca ctcaggcggc natttccctc ccagccactg agctgtcgtg 120
ccagcaccat tcctggncac gcaaaacaga acccagttag cagcagggag acgagaacac 180
cacacaagac attitictac agtatticag gigcciacca cacaggaaac citgaagaaa 240
atcagtttct aggaagccgc tgttacctct tgtttacagt ttatatatat atggatagga 300
tatgaggata tatataaa agggtactgt ttaactactg taccaacccg actttcataa 360
tgggtgcttt tcaaacagcc gaggatgngg ttaaaancat cagcttccac gttgccttct 420
                                                                   442
gcggcaangg gtttcaccag gg
```

```
<211> 395
<212> DNA
<213> Homo sapiens
<220>
<221> Unsure
<222> (343)..(343)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (372)..(372)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (379)..(379)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (384)..(384)
<223> May be any nucleic acid
<400> 50
tacgttttgt atgtttttt atttgctcca ggtggggttt tgactgtcac tttcccacac 60
tctggattag ttctgatccc accacaagga gccctcgaat tggctaaagt gagaaactgg 120
gcctgaagac tccgtaccct ctgccatctt gccgagggag tctcctttta gaaaacaatc 180
aaagggttat tgcatgagtc tggatgaatc ccactctcag ctgtccacgg gcccgaccac 240
ctcatctagc cccctttttg ggcagggaga aacctgggct cccaagttct cctccttcac 300
ttcgttaaca aaccaagggg aagagcccac cgtgaggaac ggngccatct ggcaaggttg 360
                                                                   395
ttctcccttt tnttccatnc cttnggtgaa aaccc
<210> 51
<211> 835
<212> DNA
<213> Homo sapiens
<220>
<221> Unsure
<222> (2)..(9)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (11)..(16)
<223> May be any nucleic acid
```

```
<220>
  <221> Unsure
  <222> (19)..(21)
  <223> May be any nucleic acid
  <220>
  <221> Unsure
  <222> (32)..(32)
  <223> May be any nucleic acid
  <220>
  <221> Unsure
  <222> (37)..(37)
  <223> May be any nucleic acid
  <220>
  <221> Unsure
  <222> (46)..(46)
  <223> May be any nucleic acid
. <220>
  <221> Unsure
  <222> (48)..(49)
  <223> May be any nucleic acid
  <220>
  <221> Unsure
  <222> (62)..(63)
  <223> May be any nucleic acid
  <220>
  <221> Unsure
  <222> (75)..(76)
  <223> May be any nucleic acid
  <220>
  <221> Unsure
  <222> (120)..(120)
  <223> May be any nucleic acid
  <220>
  <221> Unsure
  <222> (140)..(140)
  <223> May be any nucleic acid
  <220>
  <221> Unsure
  <222> (146)..(146)
  <223> May be any nucleic acid
  <220>
  <221> Unsure
  <222> (199)..(199)
  <223> May be any nucleic acid
```

```
<220>
<221> Unsure
<222> (300)..(300)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (365)..(365)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (388)..(388)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (397)..(397)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (403)..(403)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (421)..(421)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (441)..(441)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (461)..(461)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (475)..(475)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (494)..(494)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (514)..(514)
<223> May be any nucleic acid
```

```
<220>
<221> Unsure
<222> (536)..(537)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (545)..(545)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (550)..(550)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (554)..(554)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (562)..(562)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (565)..(565)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (569)..(569)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (580)..(580)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (584)..(584)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (587)..(587)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (595)..(595)
<223> May be any nucleic acid
```

5

```
<220>
<221> Unsure
<222> (599)..(599)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (617)..(617)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (629) .. (629)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (639)..(639)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (658)..(658)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (660)..(660)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (663)..(663)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (695)..(696)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (699)..(701)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (706)..(706)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (710)..(710)
<223> May be any nucleic acid
```

```
<220>
<221> Unsure
<222> (716)..(719)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (727)..(727)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (731)..(731)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (735)..(737)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (739)..(739)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (743)..(745)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (754)..(755)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (781)..(781)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (787)..(787)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (790)..(790)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (800)..(801)
```

```
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (805)..(805)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (809)..(809)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (820)..(820)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (827)..(830)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (832)..(832)
<223> May be any nucleic acid
<400> 51
connouncing nonnountino netgeettta thetegotge egatantunt atecateate 60
annttcttgg tgttnnatta tgttttgtgt tttttgtttg tttgtttaac tttgtgtcgn 120
tacctcagtt tgccccatn tccctnacac acacgcaaaa tactccttca gcggagcgaa 180
gaggtggcgg atgactggna cgctccatga ccggcccagc agtctctgcc tcgccaagcg 240
gatcatgttg gagacgtcag tatagtggac tgggaaacca aatacccttt ccatttcagn 300
gcaccataag atgtcctctt tctcattcat gaagacaggg aaaatgctgg tctttggcct 360
gctcnatgga gtttgactcc gtagtaangg ccctcanttt ggntgacttg ggctatcctg 420
ncatqctcca qacacttccg nagggtcaca acagaagcat nttccagggg gtggnggcca 480
ttccgacctt tggnggattg ggggggaagc cccnaaaaat aaccccttca aacggnnaaa 540
ccctngttcn gaangggccc cnttncgang ggaaactggn ccgnttnttt ctttngggnt 600
tecteccee ecceenaaa ataatgggng geeceaagna ggggaattac ecceeenen 660
ttntttttt tttggaaatt tgggggcccg ggggnnaann naaaanggcn acttennnnt 720
ttttggnccc ncccnnnant ttnnncccaa aaannttaat taaaaaggcc cttttctggg 780
nececenttn aaccgeeeen ngatnggtne ttggtteeen aacacannnn encaa
<210> 52
<211> 479
<212> DNA
<213> Homo sapiens
```

```
<220>
<221> Unsure
<222> (364)..(364)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (416) .. (416)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (464)..(464)
<223> May be any nucleic acid
<400> 52
tacgttttgt atgtttttt atttgctcca ggtggggttt tgactgtcac tttcccacac 60
tctggattag ttctgatccc accacaagga gccctcgaat tggctaaagt gagaaactgg 120
gcctgaagac tccgtaccct ctgccatctt gccgagggag tctcctttta gaaaacaatc 180
aaagggttat tgcatgagtc tggatgaatc ccactctcag ctgtccacgg gcccgaccac 240
ctcatctage ecectttttg geagggagaa eetggeteee aagtteteet eetteaette 300
gttacaaacc aaggggaaga gcccaccatg agaacgcgcc atctgcaagc tgtctccctt 360
tctncatcct tggtgaaacc tttgcgcaga aggcaacgtg gaagctgatg tttttntcat 420
ctcgctgttt gaaagcacca ttatgaagtc gggttgtaca gtantaacag tacttttag 479
<210> 53
<211> 521
<212> DNA
<213> Homo sapiens
<220>
<221> Unsure
<222> (327)..(327)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (507)..(507)
<223> May be any nucleic acid
<400> 53
agaacaccac acaaqacatt tttctacagt atttcaggtg cctaccacac aggaaacctt 60
gaagaaaatc agtttctaga agccgctgtt acctcttgtt tacagtttat atatatatga 120
tagatatgag atatatatat aaaaggtact gttaactact gtacaacccg acttcataat 180
```

```
ggtgctttca aacagcgaga tgagtaaaaa catcagcttc cacgttgcct tctgcgcaaa 240
gggtttcacc aaggatggag aaagggagac agcttgcaga tggcgcgttc tcatggtggg 300
ctcttcccct tggtttgtaa cgaagtntag gaggagaact tgggagccag gttctccctg 360
ccaaaaaggg ggctagatga ggtggtcggg cccgtggaca gctgagagtg ggattcatcc 420
agactcatgc aataaccett tgattgttte taaaaggaga eteeetegge aagatggeag 480
                                                                   521
agggtacgga gtcttcaggc ccagttntca ctttagccaa t
<210> 54
<211> 440
<212> DNA
<213> Homo sapiens
<400> 54
ctctctttga tggaatcgct acagggctcc tggtgctgaa ggacttgggc attcaggtgg 60
accgctacat tgcctcggag gtgtgtgagg actccatcac ggtgggcatg gtgcggcacc 120
aggggaagat catgtacgtc ggggacgtcc gcagcgtcac acagaagcat atccaggagt 180
ggggcccatt cgatctggtg attgggggca gtccctgcaa tgacctctcc atcgtcaacc 240
ctgctcgcaa gggcctctac gagggcactg gccggctctt ctttgagttc taccgcctcc 300
tgcatgatgc gcggcccaag gagggagatg atcgcccctt cttctggctc tttgagaatg 360
tggtggccat gggcgtttag tgacaagagg gacatctcgc gatttctcga gtccaaccct 420
                                                                   440
gtgatgattg atgccaaaga
<210> 55
<211> 273
<212> DNA
<213> Homo sapiens
<400> 55
acgttttgta tgtttttta tttgctccag gtggggtttt gactgtcact ttcccacact 60
ctggattagt tctgatccca ccacaaggag ccctcgaatt ggctaaagtg agaaactggg 120
cctgaagact ccgtaccctc tgccatcttg ccgagggagt ctccttttag aaaacaatca 180
aagggttatt gcatgagtet ggatgaatee caeteteage tgteeaeggg ceegaceace 240.
                                                                   273
tcatctagcc ccctttttgg cagggagaac ctg
<210> 56
<211> 190
<212> DNA
<213> Homo sapiens
```

```
<220>
<221> Unsure
<222> (39)..(39)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (83)..(83)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (181)..(181)
<223> May be any nucleic acid
<400> 56
aaaaacacaa aacataataa aacaccaaga acatgaggnt ggagagaagt atcagcaccc 60
agaagagaaa aaggaattta aancaaaaac cacagaggcg gaaataccgg agggctttgc 120
cttgcgaaaa gggttggaca tcatctcctg atttttcaat gttattcttc agtcctattt 180
                                                                   190
naaaacaaag
<210> 57
<211> 445
<212> 'DNA
<213> Homo sapiens
<220>
<221> Unsure
<222> (167)..(167)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (353)..(353)
<223> May be any nucleic acid
<400> 57
ttagacaaat actgatttta attaaacata aggtaaactc taggcatccg tcatctttca 60
gcctaaaaat tagcaaaaac tgttgaaaca aggcacagtt ttttccccat atttgttacg 120
tcgtggctcc agttacaaaa aaattttaat gaaaacgtta aacatanaaa tagaagtttg 180
agattttaaa aagtgtataa aaagccccac aaaacttgtc aacggttgtt ccttattcta 240
caaaatagca ccagtaagaa gagtaaaagg tgttaaaaac catttatgac agcatttctg 300
aaatgcagct tgtctgaatt cccggttctc cctaaaaacg acttctttat ggnattaaaa 360
aagggtttaa aaaaatctcc aaaggggagc accgagcttt gcaggttttc cctgtcatct 420
                                                                   445
ctcagatgtg ggggaagctc gtggc
```

```
<210> 58
<211> 287
<212> DNA
<213> Homo sapiens
<220>
<221> Unsure
<222> (38)..(38)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (171)..(171)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (204)..(204)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (274)..(274)
<223> May be any nucleic acid
<400> 58
ttccccacat ctgagagatg acagggaaaa ctgcaaanct cggtgctccc tttggagatt 60
ttttaatcct tttttattcc ataagaagtc gtttttaggg agaacgggaa ttcagacaag 120
ctgcatttca gaaatgctgt cataatggtt tttaacacct tttactcctc nttactggtg 180
ctatttttgt agaataaggg aacnacgttg acaagttttg gtgggggcct ttttatacac 240
cttttttaaa atctccaact tcctaatttt taanggttta accgttt
                                                                   287
<210> 59
<211> 535
<212> DNA
<213> Homo sapiens
<220>
<221> Unsure
<222> (452)..(452)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (526)..(526)
<223> May be any nucleic acid
```

```
<400> 59
tagacaaata ctgattttaa ttaaacataa ggtaaactct aggcatccgt catctttcag 60
cctaaaaatt agcaaaaact gttgaaacaa ggcacagttt tttccccata tttgttacgt 120
cgtggctcca gttacaaaaa aattttaatg aaaacgttaa acataaaaat agaagtttga 180
qattttaaaa aqtqtataaa aagccccaca aaacttgtca acgttgttcc ttattctaca 240
aaatagcacc agtaagaaga gtaaaaggtg ttaaaaaacca ttatgacagc atttctgaaa 300
tgcagcttqt ctgaattccc gttctcccta aaaacgactt cttatggaat aaaaaaggat 360
taaaaaaatct ccaaagggag caccgagctt tgcagttttc cctgtccgtc tctcagatgt 420
ggggaaggta tgagaaatgt atgtctgtcc cngactgctg tcactgcctc tgagttagta 480
aaaggtgaga atgagggtag cagcttccca tctggggcct gtgccngtgg agggt
<210> 60
<211> 449
<212> DNA
<213> Homo sapiens
<220>
<221> Unsure
<222> (7)..(7)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (200)..(200)
<223> May be any nucleic acid
<400> 60
ategeancag getaectagt ceteaaagag ttgggeataa aggtaggaaa gtaegteget 60
tctgaagtgt gtgaggagtc cattgctgtt ggaaccgtga agcacgaggg gaatatcaaa 120
tacgtgaacg acgtgaggaa catcacaaag aaaaatattg aagaatgggg cccatttgac 180
ttggtgattg gcggaaccan tgcaacgatc tctcaaatgt gaatccagcc aggaaaggcc 240
tgtatgaggg tacaggccgg ctcttcttcg aattttacca cctgctgaat tactcacgcc 300
ccaaggaggg tgatgaccgg ccgttcttct ggatgtttga gaatgttgta gccatgaagg 360
ttggcgacaa gagggacatc tcacggttcc tggagtgtaa tccagtgatg attgatgcca 420
                                                                   449
tccaaagttt ctgctgctca cagggcccg
<210> 61
<211> 522
<212> DNA
<213> Homo sapiens
```

```
<220>
<221> Unsure
<222> (146)..(146)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (281)..(281)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (304)..(304)
<223> May be any nucleic acid
<400> 61
aagagggaca teteaeggtt eetggagtgt aateeagtga tgattgatge cateaaagtt 60
totgotgoto acagggooog atacttotgg ggcaacctac cegggatgaa caggooogtg 120
atagcatcaa agaatgataa actcgngctg caggactgct tggaatacaa taggatagcc 180
aagttaaaga aagtacagac aataaccacc aagtcgaact cgatcaaaca ggggaaaaac 240
caacttttcc ctgttgtcat gaatggcaaa gaagatgttt ngtggtgcac tgagctcgaa 300
aggntetttg gettteetgt geactacaea gaegtgteea acatgggeeg tggtgeeege 360
cagaagctgc tgggaaggtc ctggagcgtg cctgtcatcc gacacctctt cgcccctctg 420
aaggactact ttgcatgtga atagttccag ccagggccca agcccactgg ggtgtgtggc 480
agagcaggac ccaggaggtg tgattctgaa ggcatcccca gg
                                                                   522
<210> 62
<211> 573
<212> DNA
<213> Homo sapiens
<400> 62
ctaaqatcca ttttctaaac tccaattgag cattctctgt atctgggtgg tttttacttt 60
tttacttaat cttgcttgat caggaactct ggtgtcttct tggcccccca cgtgatctcg 120
ttcatggtca cttttttgtt tatctcattt tctctgaggc tggtccttcc tgttaacgtc 180
ttggcatttg tgggaagcac aaaatgttct tgtccctcca actctgcttt tcgctccctg 240
coetgocatt cotococgo gootgocoto tocottocat ottococagg tactittoto 300
teccageest gecaetette tgeegeaest gegetetees etecatettt eccaggtast 360
tttgagcctt gactccccag gtcccttcat tctgtgctca ctccatgatg tcattttgtt 420
ctccagttaa agaaagtaca gacaataacc accaagtcga actcgatcaa acaggggaaa 480
aaccaacttt tccctgttgt catgaatggc aaagaagatg ttttgtggtg cactgagctc 540
gaaaggatet ttggetttee tgtgeactae aca
```

```
<210> 63
<211> 559
<212> DNA
<213> Homo sapiens
<400> 63
agacaaatac tgattttaat taaacataag gtaaactcta ggcatccgtc atctttcagc 60
ctaaaaatta gcaaaaactg ttgaaacaag gcacagtttt ttccccatat ttgttacgtc 120
gtggctccag ttacaaaaaa attttaatga aaacgttaaa cataaaaata gaagtttgag 180
attttaaaaa gtgtataaaa agccccacaa aacttgtcaa cgttgttcct tattctacaa 240
aatagcacca gtaagaagag taaaaggtgt taaaaaaccat tatgacagca tttctgaaat 300
gcagcttgtc tgaattcccg ttctccctaa aaacgacttc ttatggaata aaaaaggatt 360
aaaaaatctc caaagggagc accgagcttt gcagttttcc ctgtcatcta tcagatgtgg 420
ggaaggtatg agaaatgtat gtctgtccct gactgctgtc actgcctctg agtttagtaa 480
aaagatgaga aatgagggta gcagacttct catctgggga cctgtgcctg tggagggtag 540
                                                                   559
gtctcctgga gagggaatg
<210> 64
<211> 391
<212> DNA
<213> Homo sapiens
<400> 64
ttttttttta gacaaatact gattttaatt aaacataagg taaactctag gcatccgtca 60
tctttcagcc taaaaattag caaaaactgt tgaaacaagg cacagttttt tccccatatt 120
tgttacgtcg tggctccagt tacaaaaaaa attttaatga aaacgttaaa cataaaaata 180
qaaqtttqag attttaaaaa gtgtataaaa agccccacaa aacttgtcaa cgttgttcct 240
tattctacaa aatagcacca gtaagaagag taaaaaggtgt taaaaaaccat tatgacagca 300
tttctgaaat gcagcttgtc tgaattcccg ttctccctaa aaacgacttc ttatggaata 360
aaaaaggatt aaaaaatctc caaagggagc a
                                                                   391
<210> 65
<211> 517
<212> DNA
<213> Homo sapiens
<400> 65
```

acaaatactg attttaatta aacataaggt aaactctagg caggggcatc tttcagccta 60

```
aaaattagca aaaactgttg aaacaaggca cagttttttc cccatatttg ttacgtcgtg 120
gctccagtta cggaaaaatt ttaatgaaaa cgttaaacat aaaaatagaa gtttgagatt 180
ttaaaaagtg tataaaaagc cccacaaaac ttgtcaacgt tgttccttat tctacaaaat 240
agcaccagta agaagagtaa aaggtgttaa aaaccattat gacagcattt ctgaaatgca 300
gcttgtctga attcccgttc tccctaaaaa cgacttctta tggaataaaa aaggattaaa 360
aaatctccaa agggagcacc gagctttgca gttttccctg tcatctctca gatgtgggga 420
aggtatgaga aatgtatgtc tgtccctgac tgctgtcact gcctctgagt ttagtaaaaa 480
gatgagaaat gagggtagca gacttctcat ctgggga
                                                                  517
<210> 66
<211> 442
<212> DNA
<213> Homo sapiens
<400> 66
qacaaatact gattttaatt aaacataagg taaactctag gcatccgtca tctttcagcc 60
taaaaattag caaaaactgt tgaaacaagg cacagttttt tccccatatt tgttacgtcg 120
tggctccagt tacaaaaaaa attttaatga aaacgttaaa cataaaaata gaagtttgag 180
attttaaaaa gtgtataaaa agccccacaa aacttgtcaa cgttgttcct tattctacaa 240
aatagcacca gtaagaagag taaaaggtgt taaaaaccat tatgacagca tttctgaaat 300
gcagcttgtc tgaattcccg ttctccctaa aaacgacttc ttatggaata aaaaaggatt 360
aaaaaatctc caaagggagc accgagcttt gcagttttcc ctgtcatctc gcagatgtgg 420
                                                                   442
ggaaggtatg agaaatgtat gt
<210> 67
<211> 396
<212> DNA
<213> Homo sapiens
<400> 67
gcagtcaggg acagacatac atttctcata ccttccccac atctgagaga tgacagggaa 60
aactgcaaag ctcggtgctc cctttggaga ttttttaatc ctttttttt ccataagaag 120
tegtttttag ggagaaeggg aatteagaea agetgeattt eagaaatget gteataatgg 180
tttttaacac ettttaetet tettaetggt getattttgt agaataagga acaaegttga 240
caagttttgt ggggcttttt atacactttt taaaatctca aacttctatt tttatgttta 300
acgttttcat taaaattttt ttgtaactgg agccacgacg taacaaatat ggggaaaaaa 360
                                                                   396
ctgtgccttg tttcaacagt ttttgctaat ttttag
```

```
<211> 287
<212> DNA
<213> Homo sapiens
<220>
<221> Unsure
<222> (7)..(7)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (169)..(169)
<223> May be any nucleic acid
<400> 68
agacaantac tgattttaat taaacataag gtaaactcta ggcatccgtc atctttcagc 60
ctaaaaatta gcaaaaactg ttgaaacaag gcacagtttt tcccccatat ttgttacgtc 120
gtggctccag ttacaaaaaa aattttaatg aaaacgttaa acataaaant agaagtttga 180
gattttaaaa agtgtataaa aagccccaca aaacttgtca acgttgttcc ttattctaca 240
                                                                   287
aaatagcacc agtaagaaga gtaaaaggtg ttaaaaaacca ttatgac
<210> 69
<211> 356
<212> DNA
<213> Homo sapiens
<220>
<221> Unsure
<222> (193)..(193)
<223> May be any nucleic acid
<400> 69
attgaagaat ggggcccatt tgacttggtg attggcggaa ccgatgcaac gatctctcaa 60
atgtgaatcc agccaggaaa ggcctgtatg agggtacagg ccggctcttc ttcgaatttt 120
accacctgct gaattactca cgccccaagg agggtgatga ccggccgttc ttctggatgt 180
ttgagaatgt tgnagccatg aaggttggcg acaagaggga catctcacgg ttcctggagt 240
gtaatccagt gatgattgat gccatcaaag tttctgctgc tcacagggcc cgatacttct 300
ggggcaacct acccgggatg aacaggatct ttggctttcc tgtgcactac acagac
                                                                   356
<210> 70
<211> 408
<212> DNA
```

```
<213> Homo sapiens
<220>
<221> Unsure
<222> (408)..(408)
<223> May be any nucleic acid
<400> 70
tttaqacaaa tactqatttt aattaaacat aaggtaaact ctaggcatcc gtcatctttc 60
agcctaaaaa ttagcaaaaa ctgttgaaac aaggcacagt tttttcccca tatttgttac 120
gtcgtggctc cagttacaaa aaaaatttta atgaaaacgt taaacataaa aatagaagtt 180
tgagatttta aaaagtgtat aaaaagcccc acaaaacttg tcaacgttgt tccttattct 240
acaaaatagc accagtaaga agagtaaaag gtgttaaaaa ccattatgac agcatttctg 300
aaatgcagct tgtctgaatt cccgttctcc ctaaaaacga cttcttatgg aataaaaaag 360
gattaaaaaa tctccaaagg gagcaccgag ctttgcagtt ttccctgn
<210> 71
<211> 439
<212> DNA
<213> Homo sapiens
<220>
<221> Unsure
<222> (50)..(50)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (85)..(85)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (405)..(405)
<223> May be any nucleic acid
<400> 71
gcatgtagct acaggacatt tttaagggcc caggatcgtt ttttcccagn tgcaagcaga 60
agagaaaatg ttgtatatgt ctttnacccg gcacattccc cttgcctaaa tacaagggct 120
ggagtctqca cqqqacctat tagagtattt tccacaatga tgatgatttc agcagggatg 180
acgtcatcat cacattcagg gctatttttt cccccacaaa cccaagggca ggggccactc 240
ttagctaaat ccctccccgt gactgcaata gaaccctctg gggagctcag gaaagggggt 300
gtgctgagtt ctataatata agctgccata tattttgtag acaagtatgg ctcctcccat 360
```

atctccctct tccctaggag aggagtgtga aagcaaggga gcttngataa gacacccct 420 439 caaacccatt ccctctcca <210> 72 <211> 491 <212> DNA <213> Homo sapiens <220> <221> Unsure <222> (26)..(27) <223> May be any nucleic acid <220> <221> Unsure <222> (33)..(33) <223> May be any nucleic acid <220> <221> Unsure <222> (188)..(188) <223> May be any nucleic acid <220> <221> Unsure <222> (301)..(301) <223> May be any nucleic acid <220> <221> Unsure <222> (339)..(339) <223> May be any nucleic acid <220> <221> Unsure <222> (360)..(360) <223> May be any nucleic acid <220> <221> Unsure <222> (379)..(379) <223> May be any nucleic acid <400> 72 ttaattaaac ataaggtaaa ctctanngca tcngtcatct ttcagcctaa aaattagcaa 60 aaactgttga aacaaggcac agttttttcc ccatatttgt tacgtcgtgg ctccagttac 120 aaaaaaaatt ttaatgaaaa cgttaaacat aaaaatagaa gtttgagatt ttaaaaaagtg 180 tataaaangc cccacaaaac ttgtcaacgt tgttccttat tctacaaaat agcaccagta 240

agaagagtaa aaggtgttaa aaaccattat gacagcattt ctgaaatgca gcttgtctga 300

nttcccgttc tccctaaaaa cgacttctta tgggataana aagggattaa aaaatctccn 360 aaagggaggc accgagcttt gcaggttttc cctggtcatc tctcaggatg tggggggagg 420 gtatggggaa atggtatggt ctggtccctg gactggctgg tcactgcctc tggggtttng 480 gtaaaagggt g

```
<210> 73
 <211> 443
 <212> DNA
 <213> Homo sapiens
 <220>
 <221> Unsure
 <222> (9)..(9)
 <223> May be any nucleic acid
 <220>
 <221> Unsure
 <222> (11)..(11)
 <223> May be any nucleic acid
 <220>
 <221> Unsure
<222> (23)..(24)
 <223> May be any nucleic acid
 <220>
 <221> Unsure
 <222> (126)..(126)
 <223> May be any nucleic acid
 <220>
 <221> Unsure
 <222> (157)..(157)
 <223> May be any nucleic acid
 <220>
 <221> Unsure
 <222> (170)..(170)
 <223> May be any nucleic acid
 <220>
 <221> Unsure
 <222> (341)..(341)
 <223> May be any nucleic acid
 <220>
 <221> Unsure
 <222> (347)..(347)
 <223> May be any nucleic acid
```

<220>

<212> DNA

```
<221> Unsure
<222> (371)..(371)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (405)..(405)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (412)..(412)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (430) .. (430)
<223> May be any nucleic acid
<400> 73
ttggcggcna ntgcaacgat ctnnaaatgt gaatcagcca ggaaaggctg tatgagggac 60
aggcggctct tcttcgaatt ttccacctgc tgaattactc acgccccaag gagggtgatg 120
accggncgtt cttctggatg tttgagaatg ttgtagncat gaaggttggn gacaagaggg 180
acatctcacg gttcctggag tgtaatccag tgatgattga tgccatcaaa gtttctgctg 240
ctcacagggc ccgatacttc tggggcaacc tacccgggat gaacaggatc tttggctttc 300
ctgtgcacta cacagacgtg tcccaacatg gggccgtggg ngccgcncca ggaagcttgc 360
tggggaaggt netggggage gttgeettgt teatecegae acetnttteg gneectattg 420
                                                                   443
gaagggattn atttttgcca tgt
<210> 74
<211> 273
<212> DNA
<213> Homo sapiens
acqttttqta tqttttttta tttgctccag gtggggtttt gactgtcact ttcccacact 60
ctqqattaqt tctqatccca ccacaaggag ccctcgaatt ggctaaagtg agaaactggg 120
cctqaaqact ccqtaccctc tgccatcttg ccgagggagt ctccttttag aaaacaatca 180
aagggttatt gcatgagtct ggatgaatcc cactctcagc tgtccacggg cccgaccacc 240
                                                                   273
tcatctagcc ccctttttgg cagggagaac ctg
<210>. 75
<211> 250
```

```
<213> Homo sapiens
<220>
<221> Unsure
<222> (26)..(27)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (33)..(33)
<223> May be any nucleic acid
                                       4
<220>
<221> Unsure
<222> (188)..(188)
<223> May be any nucleic acid
<400> 75
ttaattaaac ataaggtaaa ctctanngca tcngtcatct ttcagcctaa aaattagcaa 60
aaactgttga aacaaggcac agttttttcc ccatatttgt tacgtcgtgg ctccagttac 120
aaaaaaaatt ttaatgaaaa cgttaaacat aaaaatagaa gtttgagatt ttaaaaaagtg 180
tataaaaangc cccacaaaac ttgtcaacgt tgttccttat tctacaaaat agcaccagta 240
agaagagtaa
<210> 76
<211> 443
<212> DNA
<213> Homo sapiens
<220>
<221> Unsure
<222> (9)..(9)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (11)..(11)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (23)..(24)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (126)..(126)
```

```
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (157)..(157)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (170)..(170)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (341)..(341)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (347)..(347)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (371)..(371)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (405)..(405)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (412)..(412)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (430)..(430)
<223> May be any nucleic acid
<400> 76
ttggcggcna ntgcaacgat ctnnaaatgt gaatcagcca ggaaaggctg tatgagggac 60
aggoggetet tettegaatt ttecacetge tgaattacte acgeeceaag gagggtgatg 120
accognicate cttctggatg tttgagaatg ttgtagnicat gaaggttggn gacaagaggg 180
acatctcacg gttcctggag tgtaatccag tgatgattga tgccatcaaa gtttctgctg 240
ctcacagggc ccgatacttc tggggcaacc tacccgggat gaacaggatc tttggctttc 300
ctgtgcacta cacagacgtg tcccaacatg gggccgtggg ngccgcncca ggaagcttgc 360
tggggaaggt nctggggagc gttgccttgt tcatcccgac acctntttcg gnccctattg 420
                                                                    443
gaagggattn atttttgcca tgt
```

```
<210> 77
<211> 394
<212> DNA
<213> Homo sapiens
<220>
<221> Unsure
<222> (1)..(1)
<223> May be any nucleic acid
<400> 77
ntttttttt ttttgaaaaa attgtgaaaa aatttaaacc ccaggggact atccaagggg 60
aaaagtgaaa tatggaaaaa ttggcggtat gaccaatttg ggcattgcaa agagccttgc 120
agaattatga agcataaaag gaaattattg gcttttggag agttttcttt tctctcttct 180
ttttttgtaa tttcaatcta tatcagtagt ggaaaggtca tagcaaaata tggagaatcc 240
aaatqqtaqa tacaacctga tatcttgtgg aacaaggcat acaacagcaa agcaacacca 300
gtgaaaccaa ggacaccaaa cagtccccag agaactccag ctgtcatgag gtctcttcta 360
tagccatcag gtcctgagat ggagactggc actg
<210> 78
<211> 277
<212> DNA
<213> Homo sapiens
<400> 78
gtcatctttc agcctaaaaa ttagcaaaaa ctgttgaaac aaggcacagt tttttcccca 60
tatttqttac qtcqtqqctc cagttaccaa aaaattttaa tgaaaacgtt aaacataaaa 120
ataqaaqttt qaqattttaa aaaqtqtata aaaaqcccca caaaacttgt caacgttgtt 180
ccttattcta caaaataqca ccaqtaaqaa gagtaaaagg tgttaaaaac cattatgaca 240
                                                                   277
gcatttctga aatgcagctt gtctgaattc ccgttct
<210> 79
<211> 469
<212> DNA
<213> Homo sapiens
<400> 79
ttttagacaa atactgattt taattaaaca taaggtaaac tctaggcatc cgtcatcttt 60
cagcctaaaa attagcaaaa actgttgaaa catggcacag ttttttcccc atatttgtta 120
```

```
cgtcgtggct ccagttacaa aaaaatttta atgaaaacgt taaacataaa aatagaagtt 180
tgagatttta aaaagtgtat aaaaagcccc acaaaacttg tcaacgttgt tccttattct 240
acaaaatagc accagtaaga agagtaaaag gtgttaaaaa ccattatgac agcatttctg 300
aaatgcagct tgtctgaatt cccgttctcc ctaaaaacga cttcttatgg aataaaaaag 360
gattaaaaaa totocaaagg gagcaccgag otttgcagtt ttccctgtca tototcagat 420
gtggggaagg tatgagaaat gtatgtctgt ccctgactgc tgtcactgc
                                                                   469
<210> 80
<211> 206
<212> DNA
<213> Homo sapiens
<400> 80
gacaaatact gatccccct acacataagg taaactctag gcatccgtca tctttcagcc 60
taaaaattag caaaaactgt tgaaacaagg cacagttttt tccccatatt tgttacgtcg 120
tggctccagt tacgaaaaaa attttaatga aaacgttaaa cataaaaata gaagtttgag 180
                                                                   206
attttaaaaa gtgtataaaa agcccc
<210> 81
<211> 391
<212> DNA
<213> Homo sapiens
<400> 81
ttttagacaa atactgattt taattaaaca taaggtaaac tctaggcatc cgtcatcttt 60
cagcctaaaa attagcaaaa actgttgaaa caaggcacag ttttttcccc atatttgtta 120
cgtcgtggct ccagttacaa aaaaaatttt aatgaaaacg ttaaacataa aaatagaagt 180
ttgagatttt aaaaagtgta taaaaagccc cacaaaactt gtcaacgttg ttccttattc 240
tacaaaatag caccagtaag aagagtaaaa ggtgttaaaa accattatga cagcatttct 300
gaaatgcagc ttgtctgaat tcccgttctc cctaaaaaacg acttcttatg gaataaaaaa 360
                                                                   391
ggattaaaaa atctccaaag ggagcaccga g
<210> 82
<211> 755
<212> DNA
<213> Homo sapiens
<220>
<221> Unsure
<222> (10)..(10)
<223> May be any nucleic acid
```

```
<220>
<221> Unsure
<222> (19)..(19)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (47)..(47)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (117)..(117)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (119)..(119)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (134)..(134)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (136)..(136)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (138)..(139)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (146)..(147)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (149)..(149)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (157)..(158)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (160)..(160)
<223> May be any nucleic acid
```

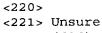
```
<220>
<221> Unsure
<222> (162)..(162)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (164)..(164)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (170)..(172)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (176)..(178)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (180)..(181)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (186)..(186)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (191)..(194)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (199)..(199)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (205)..(205)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (215)..(215)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (217)..(217)
<223> May be any nucleic acid
```

```
<220>
<221> Unsure
<222> (219)..(220)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (226)..(226)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (231)..(231)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (234)..(234)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (237)..(237)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (243)..(244)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (257)..(257)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (259)..(259)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (275)..(275)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (298)..(298)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (301)..(301)
<223> May be any nucleic acid
```

```
<220>
<221> Unsure
<222> (338)..(338)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (374)..(374)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (382)..(832)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (416)..(416)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (436)..(436)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (481)..(481)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (486)..(486)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (498)..(498)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (502)..(502)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (504)..(504)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (524)..(524)
<223> May be any nucleic acid
```

```
<220>
<221> Unsure
<222> (528)..(528)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (568)..(568)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (572)..(572)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (577)..(577)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (579)..(579)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (587)..(587)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (596)..(596)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (598)..(599)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (615)..(615)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (619)..(619)
<223> May be any nucleic acid
<220>
<221> Unsure
<222> (624)..(624)
<223> May be any nucleic acid
```





<222> (626)..(626)

<223> May be any nucleic acid

<220>

<221> Unsure

<222> (628)..(628)

<223> May be any nucleic acid

<220>

<221> Unsure

<222> (631)..(631)

<223> May be any nucleic acid

<220>

<221> Unsure

<222> (638)..(638)

<223> May be any nucleic acid

<220>

<221> Unsure

<222> (643)..(643)

<223> May be any nucleic acid

<220>

<221> Unsure

<222> (655)..(655)

<223> May be any nucleic acid

<220>

<221> Unsure

<222> (663)..(663)

<223> May be any nucleic acid

<220>

<221> Unsure

<222> (666)..(666)

<223> May be any nucleic acid

<220>

<221> Unsure

<222> (668)..(668)

<223> May be any nucleic acid

<220>

<221> Unsure

<222> (701)..(701)

<223> May be any nucleic acid

<220>

<221> Unsure

<222> (716) .. (716)

<223> May be any nucleic acid

tgtccaacat gggncgtgt gnccgcaga agcttgctg ggaaggtct tggagnggt 420 tcttgtcaat cccganaacc tctttccggc cccccttgga aggggcttac ttctgggaat 480 ngttgnattt ggtcccangc cnangggcc caaaaggcc ccanttngg gggttgttt 540 ttggaaagga ggcccaaggg acccccngg gnggggngnt tgttcnccc ctgggnanng 600 ggaattcccc cccangggnc cccngntntt nttccccncc aanttttgg ggttnggggt 660 tanaanancc cgggggtttc cccccaagg cccccctct ntttgggttc aaaaangggg 720

755

```
<220>
<221> Unsure
<222> (739)..(739)
<223> May be any nucleic acid

<220>
<221> Unsure
<222> (747)..(747)
<223> May be any nucleic acid

<400> 82

tcttcgaagn cgagtcggnc tgtaccctca tacaggcett tcctggntgg attcacattt 60
gagagatcgt tgcatggct tccgcaatc accaagtcaa atgggccca ttcttcnana 120
ttttctttg gggngngnnc cccccnngnc cccccnngn tntnttttn nntttnnncn 180
ngtccncccg nnnngggtnc tcacncactt cagangnnn gggctntcct nccnttntgg 240
ccnnctcttt geggatngnt aggctgtcgc gatgncatca aacaatgaca ggactcgnct 300
nggcgccttc gggctgcggg aatgggagga tcttttggntt tcctgtgcac tacacagacg 360
```

gggggggaag gggcccccnc cctgaanttt ttttc